

53rd LIST OF FINE MINERALS

MANGANITE, Harz Mts. Group of brilliant terminated xls. $4\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$	\$20.00
DEVILLITE, Herregrund. Micro $\bar{5}$ xld. on matrix. $2\frac{1}{2} \times 1\frac{1}{2}$	3.50
CEBOLLITE, Colorado. Massive. $2\frac{1}{2} \times 2\frac{1}{2}$	2.00
ORTHITE, Norway. Xline. mass. $3 \times 1\frac{1}{2} \times 1\frac{1}{2}$ (8 oz.)	3.00
DUFRENITE, Cornwall. Globular incrustation on rock. 3x3	3.00
PHARMACOSIDERITE, Cornwall. Green cubic xls. on rock. $2\frac{1}{2} \times 2$	3.50
ANTLERITE, Chuquicamata. Xline, fibrous w. some rock. $2 \times 1\frac{1}{2} \times 1$	2.50
SILVER, Michigan. Bright xld. mass. $2\frac{1}{2} \times 1$	7.50
PYROMORPHITE, Germany. In large xls. partly altered to GALENA. 2x2	3.00
GALENA, Alston, Cumberland. In octahedral & skeletal xls. $2\frac{1}{2} \times 2$	2.50
IDOCRASE (VESUVIANITE), Vilui River. Good $1\frac{1}{4}$ " xl. in rock. $3 \times 2\frac{1}{2}$	5.00
PYRITE, Ibez Mine, Colorado. Brilliant cubic xl. $2\frac{3}{4} \times 2\frac{1}{4} \times 2$ (1 $\frac{3}{4}$ lbs.)	10.00
GOLD, California. Xld. in white Quartz. $3\frac{1}{2} \times 2\frac{1}{2} \times 2$	10.00
CALCITE, Cumberland. Small pinkish xls. on Hematite. $3\frac{1}{2} \times 3$	2.50
SIMPSONITE, Brazil. $\frac{3}{4}$ " loose xl.	3.50
CASSITERITE, La Villeder, France. Brown twinned xl. $1\frac{1}{2} \times 1\frac{1}{4}$	2.50
ALABANDITE, Romania. Xline. mass. $2\frac{1}{2} \times 2\frac{1}{2}$	2.50
HEMIMORPHITE (CALAMINE), Mexico. Well xld. with Calcite xls. 4x2	2.50
HEMATITE, Cumberland. Mammillary mass, "Kidney Ore". $3 \times 2\frac{1}{4} \times 1\frac{1}{2}$	3.00
CHALCOCITE, Kennicott, Alaska. Pure solid mass. 3x2 (1 lb.)	2.50
CELESTITE, Sicily. Small brilliant xls. w. dark-yellow Sulphur. $3\frac{1}{2} \times 2$	3.00
LEADHILLITE, Leadhills. Well xld. in Barite. $3 \times 2 \times 2$	12.50
SHEELITE, Mexico. Orange-colored xl. $1\frac{1}{2} \times 1\frac{1}{4}$	5.00
CHALCOPYRITE, Cornwall. Stalactitic, iridescent, w. xld. Calcite. $2\frac{3}{4} \times 1\frac{1}{2}$	2.50
ANDALUSITE, Co. Galway, Ireland. Crudely xld. purplish mass. 3x2	2.00
COTHAM or LANDSCAPE MARBLE, Bristol, Eng. Pol. slab. 5x3, good 'scape'.	3.50
CHALCOCITE, Cornwall. In large twinned xls. on rock. $3\frac{1}{2} \times 2$	7.50
PYRRARGYRITE, Andreasberg. Group of very fine xls. w. matrix. $3 \times 2 \times 1\frac{1}{2}$	30.00
LITHIOPHILITE, Branchville, Conn. Xline. mass. $2 \times 2 \times 2\frac{3}{4}$	3.00
DESCLOIZITE, Los Lamentos. Mass of small brilliant brown xls. $3\frac{1}{2} \times 2\frac{1}{2}$	5.00
FLUORITE v. ANTOZONITE, Ontario. Deep purple xline. mass. $2\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$	2.00
MALACHITE, Tsumeb. Pseudo. after AZURITE xls. on Malachite. $3 \times 1\frac{3}{4}$	5.00
TOURMALINE, Pierrepont, N. Y. Splendent black xl. $2 \times 1\frac{3}{4} \times 1\frac{1}{2}$	3.00
FLUORITE, Clay Center, Ohio. Mammoth "built-up" yellowish-brown cubic xl. $4 \times 3\frac{1}{2} \times 2\frac{3}{4}$ (2 $\frac{3}{4}$ lbs). Fluoresces white under LW	12.50
PYROMORPHITE, Leadhills. Bright orange micro. xls. on matrix. $2 \times 1\frac{1}{2} \times 1\frac{1}{2}$	3.50
LANARKITE, Leadhills. Small group of xls. w. Cerussite in rock. $2\frac{1}{2} \times 1\frac{1}{2}$	4.00
CORUNDUM, Buck Creek, N. C. Crudely xld. deep pink mass w. some Smaragdite. $3\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{4}$. Fl. brilliant red under LW	5.00
CALCITE, Joplin. Fine "Golden" xl. 5x4x2. A good "old-timer".	6.50
CURTISITE v. CINNABAR, Lake Co., Calif. In Serpentine. $3 \times 2\frac{1}{2}$. Fl. LW.	3.00
PYRRHOTITE, Romania. Xld mass w. yellow Quartz xls. $4 \times 3 \times 1\frac{1}{2}$	7.50
APATITE, Durango, Mexico. Yellow transparent xls. in matrix. $4 \times 2\frac{1}{2} \times 2$	5.00
ENDLICHITE, Hillsboro, N. M. Bright yellow xls. on rock. $2\frac{1}{2} \times 1\frac{1}{4}$	2.50
TOPAZ, Ural Mts. Well terminated incomplete xl. $1\frac{1}{2} \times 1$. Not cutting.	5.00
ASTROPHYLLITE, Kola Peninsula, U.S.S.R. Xline. mass. $3\frac{1}{2} \times 2$	2.50
QUARTZ v. FIBROUS QUARTZ, Providence, Rhode Island. 3x2	2.00
GEHLENITE (VELARDENITE), Velardena, Mexico. Massive. $3 \times 2\frac{1}{2} \times 1\frac{1}{2}$	2.00
GAHNITE, Franklin, N. J. Blue octahedral xls. on matrix. $2\frac{1}{2} \times 2 \times 1\frac{1}{2}$	3.50
STICHTITE, Transvaal. Purple veins in Serpentine, polished. $3\frac{1}{2} \times 3 \times 1\frac{1}{4}$	4.00

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No lists furnished, but inquiries for specific minerals welcomed.

ROCKS and MINERALS

PETER ZODAC, Editor and Publisher

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Chips from the Quarry

PRESIDENT EISENHOWER IS A ROCK COLLECTOR

WASHINGTON, April 9 (UP) — President Eisenhower is a rock collector. He drops one into his pocket every time he visits a new country.

Results of his interest in geology are now evident on his desk. He has a dual fountain pen set ringed with small stones. He explained the set recently to Mary

Pickford.

"Do you know what these are?" he asked her. "They are little stones I have picked up from every place I have ever been in my life."

The platform holding the pens is set with two rows of stones, forty in all, about the size of pebbles.

11th ANNUAL AGATE SHOW

The 11th annual agate show of the North Lincoln Agate Society will be held in the Delake Grade School on Hi-Way 101, Delake, Oregon.

R. G. Lacey
Wecoma Beach, Ore.

Another Cover to Cover Reader!

Editor R & M:

Regarding the Rocks and Minerals magazine, I find the Micro-Mounter, Amateur Lapidary, and The Sand Collector very interesting and the department I like best is World News on Mineral Occurrences. The articles are very nice in that they stress no particular area or mineral class but play all over the field. I think you have a pretty fair balance between reading matter and advertisements. I prefer the bi-monthly schedule as it would probably be impossible to maintain R & M's high standards on a monthly basis. All in all, I am another of your cover-to-cover readers and think the magazine just about perfect as it is now.

William A. Brock
5 Franklin St.
Pittsfield, N. H.

Jan. 13, 1953

ATTENTION SUBSCRIBERS!

ROCKS AND MINERALS comes out once every two months as follows:

Jan. - Feb., out about.....	Feb. 10
March - April, out about.....	April 10
May - June, out about.....	June 10
July - August, out about.....	Aug. 10
Sept. - Oct., out about.....	Oct. 10
Nov. - Dec., out about.....	Dec. 10

Would Not Be Without It!

Editor R & M:

I think R & M is wonderful as it explains things in such a simple way that you can understand it.

I would not be without it and look forward for it to arrive. Mr. Editor, if you have any reason to travel through Meredith, N. H., this summer, you are invited to stop and see me.

I would be pleased to meet the Editor that puts out that fine magazine, R & M.

Roger S. Hubbard
R. F. D. 1
Meredith, N. H.

Mar. 18, 1953

R & M Cataloged by Color!

Editor R&M:

The March-April issue of R&M just arrived and, as usual, I quit my work and sat down to read it. It annoys me to have anyone criticize the magazine! What earthly difference does it make what kind of a cover you have on it. It's the inside that's important. Truthfully, I've read the Jan.-Feb. issue from cover to cover and had never noticed that you'd changed the cover. I'm always too anxious to read it to look at the outside. But I *do* like it. Think I'll catalog the new issues by color, then when I want a particular issue all I'll have to do is pick out that color and save time—won't have to check dates to see which one I want.

Mrs. Betty McCarty
5824 E. 12th St.,
Kansas City 3, Mo.

April 15, 1953.

Oriental Art In Stone

By SGT. DONALD G. STANLEY RA 16217640

Home Address—1135 N. Latrobe Avenue, Chicago 51, Illinois

東洋石美術品

This, I believe is a subject fairly new to this magazine. Whether or not it will appeal to the majority of readers I have no way of knowing at this time. However the subject does bear a definite relationship to the science of mineralogy and the lapidary arts.

I will attempt to present to the reader, briefly, descriptions of various ornamental and useful objects made by Oriental artisans and of the minerals and rocks which they utilized.

I do not pretend to be any kind of an authority on such a comprehensive subject. But, since my arrival in the Far East almost two years ago, it has been my good fortune to become acquainted with people who are authorities on every phase of Oriental arts and crafts. This includes writing, painting, ceramics, gem cutting and also the histories of their development. In such a case, I quickly developed many new interests and, most important, a sincere appreciation of the culture of the East. Even the most uninformed person appreciates beautiful things, especially when they have an obvious connection to his primary hobby or interests.

My artistic tastes improved through a close association with my father in law, an expert on Oriental art and writing. My wife, who is a graduate of Meiji University of Tokyo, has also helped to encourage me.

Not long ago my wife and I visited some art shops in Tokyo in search of some suitable gift to send to our parents in Chicago. If I were rich, I would have certainly bought out half the store. There were beautiful Chinese Jades in a great variety of colors and forms. There were

This is the title of this article in Chinese characters. This is in the author's own handwriting, using the materials shown in Figure 6.

shimmering spheres of Rock crystal. Beautiful vases, bowls, screens, figures and personal ornaments were carved not only of Jade but also of Rose Quartz, green Aventurine, Carnelian, Smoky Quartz, Tiger eye, Serpentine and Marble.

We saw huge faceted stones of precious golden Topaz, Aquamarine, Tourmaline, Citrine, Smoky Quartz, Zircons and Amethysts sold both loose or set in a variety of jewelry. Much of the rough material is imported from Brazil and is cut either in Hong Kong or in Kofu, the famous crystal city of Japan where the tiles of hot spring baths are lined with Quartz crystals. Before I go off the track I hope to save this for a future article. The gem industry of Japan could fill volumes.

A Rose Quartz Incense Burner

For our parents, we purchased a large Rose Quartz vase of the Ming Period. For our own collection, we purchased an elaborate carving of a Chinese incense burner which is shown in Figure 1. It



Figure 1
A Chinese incense burner carved from Rose Quartz.

was cut from a single piece of Rose Quartz. The rings in the handles are moveable and the inside of the vessel has been hollowed out to a thickness of about one-half inch. The animal figure atop the lid is a Chinese style lion and the figures forming the handles represent dragon heads.

The entire piece is of an unusually deep and uniform shade of Rose Quartz. The polished surface exhibits a peculiar silky luster. The many fractures in the material, typical of Rose Quartz, greatly add to the interest and beauty of the finished piece. How do the Chinese carve such intricate forms out of such easily fractured material?

A Crystal Ball

Figure 2 shows one of our next purchases. It is a clear, flawless sphere of Rock Crystal, beautiful and mysterious in its utter simplicity. It seems to glow with pure white light from whichever angle you view it. The small bronze elephant with silver inlay was a gift from my father in law. This crystal ball is from China and the bronze elephant is from



Figure 2
A rock crystal sphere

Japan. Spheres of Rock Crystal and Smoky Quartz of various sizes may be purchased in Japan at ridiculously low prices.

Jade Carvings

In the various art shops in Tokyo we saw magnificent carvings of Jade, truly museum pieces. A piece that particularly attracted my eye was a deep green Jade carved in the form of a leaf shaped bowl. Another superb piece was a carved slab of green and brown Jade supported upright on a carved wooden stand. Figures and scenery were carved in relief on both sides of the slab. When this translucent piece was held up to the light, the deep, rich green and brown was a pleasure to behold. Fine Jade carvings are expensive anywhere you go, so I put off the temptation to put a month's pay into either of these pieces. However, the wife and I bought several smaller pieces which are shown in figure 3. I will leave their exact identity and use to the experts, but my guess is that they were used for personal ornaments or possibly hung on silk threads and used as chimes. Jade has a musical quality and gives off a pleasing sound when struck.

In figure 3, piece A is an odd design consisting of a bat, fish and flowers. In the center is the Chinese ideograph meaning "happiness."

FIGURE 3-B as well as the other pieces are carved and polished on both sides with a similar design.

FIGURE 3-C is probably a figure of a carp which, in the Orient, is a symbol of luck and long life.

FIGURE 3-D is a figure of a tropical bird in a bamboo tree. All the above mentioned pieces are carved from the same kind of grayish, almost white Jade.

FIGURE 3-E is carved from an apple green Jade with traces of white. It is a design resembling an ax head and is unusual for the number and arrangement of drilled holes.

It is interesting to note that pure white Jade was most highly prized by the Chinese although certain shades of green and brown were greatly desired. Most collectors think of Jade only as a green

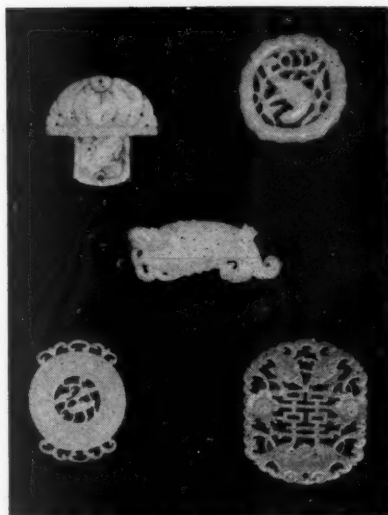


Figure 3
Carved Jade Pieces

A B
C
D E
The jade fish is about 3 inches long.

mineral but actually it may be black, gray, red, blue, yellow, purple and as combinations of these shades. Only the minerals Nephrite and Jadeite are considered to be true Jade. Both were used by the Chinese. I still hope to purchase one of the larger museum quality Jade carvings when and if I get a promotion and raise in pay.

Personal Seals Hand Carved From Onyx Marble

Figure 4 shows my own personal set of seals. This is the style widely used by Oriental artists and writers. Wall hangings of brush-writing or a painting are always stamped with the artist's own set of seals. A special red ink pad is used. The three pieces are hand carved from a greenish brown Onyx marble. The animal figures at the top represent Chinese style lions.

Figure 5 shows the impressions of the three seals. The set itself was carved in China but the inscriptions were cut in the shop of a Japanese seal maker. A skillful and steady hand was needed in

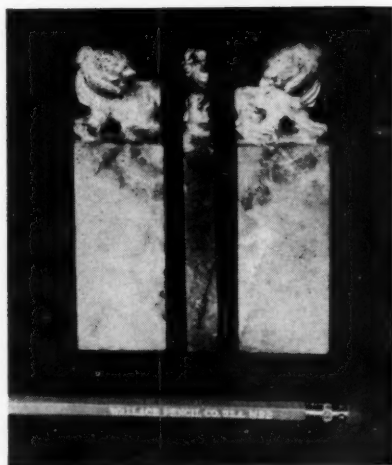


Figure 4

A set of personal seals of the style used by artists and writers.

either case. The figures used are ancient Chinese pictorial characters which were in everyday use about two thousand years ago. An artistic phrase of the owner's choice is engraved in the narrow seal shown at the top in figure 4. The other two consist of the owner's name and "pen name."

In the Orient, people do not write their signatures on legal documents as in the West. Instead they use smaller, single pocket seals which are registered in the owner's home town or province. The best pocket seals are usually carved from Jade, Rock Crystal, Carnelian, Tiger eye and rutiled Quartz. Japan imports the rough materials from Brazil but the Jade comes from Burma.

A Stone Ink-Making Slab

We see, in Figure 6, a set of writing materials such as is used in China, Korea and Japan. It consists of a small china-ware water bottle, a stick of dry black ink, a stone slab and a brush. A few drops of water are poured on the slab. The ink stick is then rubbed over the slab until ink is produced. The most artistic



Figure 5

These are impressions of the seals which are shown in Figure 4. From top to bottom—an artistic phrase, the owners' name, and his pen name. Ancient Chinese pictorial characters are used. Great skill was needed by the seal-maker to carve these designs in stone.

Chinese and Japanese characters are written with a brush on rice paper.

The stone ink-making slabs are made of selected pieces of a hard, extremely fine grained sedimentary rock. Sometimes Jade and Serpentine-marble are used, more for decorative purposes than for utility.

This particular ink slab was made in China about 150 years ago. It is carved with a beautiful relief design of grapes hanging on the vine. This fine stone was a Christmas gift from my father-in-law, since I am taking up the study and writing of Chinese characters.



Figure 6

A set of Oriental writing materials: Water Bottle, Ink Stick, Stone Slab, Writing Brush. This ink-making slab is made from a hard fine grain sedimentary rock. Others are made from jade or serpentine marble.

I hope the readers have gained some interest in these descriptions, however crude and unscientific a writer I am. I would be very happy to hear comments and criticisms from others regarding this subject.

As new pieces are added to my collection, I will send in photographs and descriptions to **ROCKS AND MINERALS** if they are desired.

MINERALS OF THE FROSTBURG FIRE CLAY MINE NEAR FROSTBURG, MARYLAND

By HAROLD LEVEY

5023 Pimlico Road, Baltimore 15, Maryland

For some time, the plight of the Baltimore mineral collector has been getting worse. Mine dumps of Maryland localities worked for valuable copper, chrome, lead, gold and iron, have been weathering away in some cases for more than 150 years. Quarries, such as the fine zeolite locality at Milford, the garnet and gem aquamarine occurrence at the Arundel Quarry, and the fine Jones Falls quarries known for a wide variety of minerals, have been closed. Only one or two localities around Baltimore still are productive of good specimen material. This has made the local collector go farther afield to find new localities. Until recently, very little work has been done in the extreme western portion of the state, so this offered a challenge to us. This report is the first of a series on localities of this region.

The westernmost counties of Maryland are Garrett and Allegany, lying some 150 miles west of Baltimore over the Blue Ridge and part of the Allegheny mountain

sedimentary in nature. Mountains up to 3000 feet dominate the topography. Mining and quarrying here are confined to coal, limestone for cement and road stone, and clay for fire brick. It is this clay mining activity that has provided Maryland with a fine locality.

The Frostburg Fire Clay Mine is situated on the eastern flank of Big Savage Mountain two miles west of Frostburg on U. S. route 40. It is easily accessible by automobile directly to the mines and dumps. Starting at the last traffic signal in town (Water Street), travel 1.7 miles at which point the end of the extensive dumps may be seen on the right hand side of the road. Going .3 mile farther, turn right on dirt road and keep right at forks; at .3 miles the road dead ends at the mine. At the location there are an underground tunnel operation and a strip mine to dig out both hard 'flint clay' and soft plastic clay, as both are necessary in the manufacture of fire bricks.



—Photo by Harold Levey.

View of Tunnel Mine—Frostburg Fire Clay Mine, near Frostburg, Md.

Geologically, the mine is situated in the Pottsville formation of the Carboniferous Era. The clays are overlain by Homewood sandstone and in turn overlay shale and coal. Frequently included in the clay are iron carbonate nodules from the size of a golf ball up to four feet across. These are detrimental to clay mining, but at several places in the county where the 'ore balls', as the miners call them, were found in quantity, the mines were operated as iron mines around the 1850's.

The present Frostburg Fire Clay Mine was opened about 1906. Before this, there was a mine several hundred feet up the mountain but it apparently ran into too many ore balls. The tunnel mine goes into the side of the mountain several hundred yards and branches off at intervals. Clay is dug by miners in stopes and loaded into horse drawn cars. These are taken onto a loading platform, where the clay is dumped into trucks and taken to plant at Allegany. At the strip mine, the clay is dug by power shovels and then shipped to the plant. Sandstone and ore balls are dumped on extensive dumps below the mines. Between the present tunnel operation and the strip mine, the dumps of the old fire clay mine can be

seen and are a fine source of specimen material.

The minerals of the Frostburg mine are nearly all confined to the siderite nodules. Most are vuggy inside, however some are solid. The nodules are quite hard and require a great deal of work to break them. A sledge hammer is a necessity. Primarily Frostburg is a micro locality, although recent extensive work has shown fine cabinet specimens can be gotten. The mine is mentioned in 'Minerals of Maryland' as being near Frostburg and that siderite and barite crystals had been reported. This is probably a reference to Dr. Schaller's paper on 'Siderite and Barite from Maryland' in the 'American Journal of Science' of 1906. In this, Dr. Schaller gives an excellent crystallographic description of the two minerals from specimens obtained from the Foote Mineral Co. of Philadelphia. It was not until recent years that the locality was brought to the attention of local collectors. Mr. Paul Desautels, formerly of Philadelphia, moved to Baltimore and was instrumental in starting the Baltimore Mineralogical Society. In his fine micro collection we had an opportunity to see the Frostburg minerals. After this, several collectors and



View of Strip Mine, looking south, Frostburg Fire Clay Co.—Photo by Harold Levey.

I made numerous trips to the mine in 1950, 1951, and 1952 with excellent results. Recently two new minerals for the state were uncovered at the mine.

Minerals

SIDERITE is by far the most abundant mineral here. The carbonate of iron occurs first as the matrix for the suite of minerals to be found. It is very compact and impure, having a specific gravity of 3.7. As stated before, the nodules contain cavities which are lined with siderite crystals; the crystals derived from the massive siderite. Crystals range in size from very minute to one-half inch in size. The scalenohedron is the common habit. A crystal drawing of a typical Frostburg siderite may be seen on page 167 of Volume II of Dana's System of Mineralogy 7th edition. The crystals are usually attached on one end to the matrix but sometimes doubly terminated crystals are seen. Also found are rounded and flattened rhombohedrons (nail head). While the faces of the scalenohedrons are sharp and bright, the nail head crystals are quite dull. Quite often the surface of the crystals has a brilliant iridescent coating. Mixed shades of blue, green, red, orange, and violet make handsome cabinet specimens.

BARITE at Frostburg occurs in three different forms. First as a massive form which is quite opaque and shows a very fine cleavage. Secondly, there is a sugary form composed of sub micro crystals. The third form is the fine transparent crystals which occur in size from microscopic to $\frac{3}{4}$ inch. They are found in the uncommon habit, prismatic, being elongated parallel to the c axis. Some twenty-one forms are present, making the crystals very complex. For the micro collector, I don't think any better barites could be found. Sometimes tabular crystals are found, the largest being about $\frac{3}{8}$ inch in size. The hand specimen material which was recently found in the strip mine consisted of nice size crystals on a matrix of oil green siderite crystals.

PYRITE—Several specimens of iron sulfide have been collected here but as micro only. The first one observed in the Spring of 1952 was found in a badly weathered siderite rock and consisted of twinned groups of tarnished crystals. On my last trip to the mine more pyrite was collected associated with very fine transparent siderite crystals. These, however, were more complex in form. The cube was still dominant with octahedron faces seen frequently and dodecahedron faces less often. Most of the micro crystals were again tarnished and many quite beautifully iridescent. While pyrite seems to be rather common at the Union Clay Mine near Grantsville, Garrett Co., at Frostburg these were the only two finds to my knowledge.

SPHALERITE—A few specimens of zinc sulfide were collected on July 4th, 1952, as first occurrences at this locality. They were found associated with millerite in the siderite matrix. There were slight suggestions of crystal faces; however, the cavity in which it was found gave very little room for growth. On the last trip to Frostburg much massive sphalerite was found on the dumps of the original mine. One well defined tetrahedral crystal was collected. Generally, the sphalerite is yellowish brown in color, however the single crystal was a light ruby red. No micro material has been found as yet.

GOETHITE—This mineral has been observed only in the southern end of the strip mine forming an outer shell for very large siderite nodules. It occurs in thin shiny black, slightly botryoidal masses showing a radial fibrous structure.

QUARTZ—On the second trip to Frostburg, this mineral was added to the list. As a rule, it is found associated only with the nail head type siderite. The crystal sizes run from $\frac{1}{8}$ to $\frac{3}{4}$ inch. Generally the crystals are the common terminated prismatic type, but on a recent trip, Mr. Ned Blandford of McLean, Virginia, found several scepter

type crystals and Mr. Jack Kepper of Baltimore found a fine 'Herkimer diamond' crystal.

MARCASITE — This mineral was found associated with the first pyrite reported at this locality. This again was found only as micro material. It occurs as single crystals which are twisted, and also as twins similar to the Folkestone, England, marcasites. In all four pieces were collected. Frequently massive marcasite may be seen in the masses of coal on the dumps.

HEMATITE—The hematite at Frostburg is found in the red earthy form and is mentioned only as an associated mineral—one which is found in the clay, not in the siderite.

LIMONITE—This mineral has been noted as occurring in yellow earthy masses and also as an alteration product on the outside of the siderite nodules.

MILLERITE — This mineral (nickel sulfide) was found here for the first time by Mr. Blandford and is a new species for the state of Maryland. Mr. Blandford's first two specimens came from the dumps of the original tunnel mine here. On the following visit, Mr. John Glaser and I found some exceptional specimens at the southern end of the strip mine. One micro group of capillary crystals was collected. The rest of the material consisted of bright radiating hair-like crystals in groups from $\frac{1}{4}$ inch to the largest I found $1\frac{3}{4}$ inch.

GALENA—In one specimen of siderite associated with barite and quartz crystals were noted micro black cubic crystals. They were embedded in the fine sugar-like barite and from crystal form, color, cleavage, and association, I take these to be the sulfide of lead, galena.

DICKITE—Recently identified at the U.S. National Museum on a specimen of Frostburg siderite was the mineral dickite, an aluminum silicate. It occurs as a

coating of sub-micro monoclinic crystals on the siderite crystals. The material is light mud yellow in color, and this is the first locality in Maryland for this mineral.

Waldemar Lindgren in his book 'Mineral Deposits' lists as possibilities to be found in siderite concretions the following minerals—marcasite, pyrite, arsenopyrite, millerite, galena, sphalerite, and chalcopyrite. Of those listed, only arsenopyrite and chalcopyrite have not yet been found, but quartz, barite, and dickite were added. Future work will no doubt uncover other associate minerals from the Frostburg locality and there still are similar mines at Grantsville, Mt. Savage, and Ellerslie in Maryland and Fairhope in Pennsylvania to be collected at.

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Keep My Name on Subscription List!

Editor R & M:

Rocks and Minerals graces a more finished and professional appearance with each issue. And it does the *East* of U.S.A. its just due. And it's not only all about agate. Agate is a fine quality of quartz which is not to be tossed into a pond. But I have read so much of it and the West that I just like to graduate to minerals.

So please keep my name on that subscription list of yours and send the Rocks and Minerals magazine my way so I can learn how to find minerals as well as where to find them and what they are besides quartz or agate.

Thanks for giving us rockhounds such a fine copy every time it comes out.

Mr. Aloysius J. Gruss
11309 St. Mark Ave.
Cleveland, Ohio

Mar. 9, 1953

OXFORD COUNTY, MAINE—1952

By E. L. SAMPTER

49 West 45th Street, New York 36, N. Y.

Briefly—except for three localities—my activities were very limited, but those three places were enough to keep any mineral hobbyist active. They are Perham's shop, the Bumpus quarry and Nestor Tamminen's.

June and July were too hot to go any place away from our lake and out of our pine woods, but after the rains came in August collecting was a pleasure.

Perham's

Perham's store at Trap Corner, Maine, on #26, was the mecca for all collectors, as usual. "Everybody" came there to buy from his large stock of crystals and gems; get the news of new localities and talk to the ever friendly, patient and helpful Stanley Perham. His shop was always crowded with campers, tourists and advanced collectors and his new parking lot full of cars, that had brought in lovers of Maine minerals.

Bumpus

The Bumpus quarry in Albany, Maine, on #5, was being worked all summer by Lawrence Anderson. He has also opened his own mineral shop, on #5, at East Stoneham, in his home, where he sells specimens.

Bumpus was recently sold to the American Encaustic Tiling Co., of Lansdale, Pa., who use the feldspar for their line of beautiful glazed tiles. This firm also bought the control of the United Feldspar and Mineral Corporation, of Spruce Pine, N. C., and West Paris, Me. So we can anticipate more activity and better specimens there, than appeared this past year.

Nestor Tamminen's

The prize place of all and a must for every one interested, is the enlarged workings of Nestor Tamminen, across the road from his house and near the base of Noyse Mountain, in Greenwood, Me.

It is now a large development and was worked by 10 men all summer, with blasts going off almost every afternoon. The pockets in the quarry produced most of the pegmatite minerals. Among them were good specimens of:—cassiterite, cookeite,

apatite, montmorillonite, blue, pink and white beryl, mica, feldspar, black, green and watermelon tourmaline, spodumene, uraninite, and best of all quartz. Quartz came out clear, smoky, tabulated, double terminated and brilliant, similar to Herkimer diamonds, with bubbles and phantoms and in a great variety of crystal shapes and sizes.

The dumps are profitable to work in too, but Tamminen collects all of the crystals he can, after each blast. He takes them to his house, where he spends hours removing the sticky clay and then offers them for sale at very reasonable prices. He has a collector's "gold mine" in his home.

He and his wife are exceptionally delightful and friendly to visit and the quarry and house are well worth a lengthy trip.

Other Quarries

Redstone and the Lovejoy Pits, near Conway, N. H., produced more of their fine black quartz crystals as well as apatite, topaz, etc. At Redstone, Toni Matoni moved some of the old dump to get blocks of granite, for a nearby road construction and so exposed many fine specimens which have been hidden there for years.

In the Tiger Bill quarry on Long Tom, near Greenwood, Me., a pocket full of wonderful blue apatites was found. The old Wardwell quarry was blasted again for mica, by Joe Petchnic and his sons and so was the old quarry near the Stearns farm. Durgin Hill quarry, near North Lovell, is to be worked again soon. The large mica producer on Weissman's farm, near Tamminen's was also busy. Newry is producing a great deal of beryl and many smaller places are being mined once more.

The boom is on in Oxford County because of the scarcity and great need for mica and beryl, as well as to supply the enlarged flotation plant, in West Paris with feldspar.

(Continued on page 293)

ARCTIC JADE

By JOEL MARTIN HALPERN

The "primitive" Eskimo and some of the Northwest Coast Indians can hardly be considered lapidaries, yet there is evidence of remarkably complicated jade carvings made by them. They produced, over a period of many centuries, a great variety of both useful and decorative jade implements. Although there remains an enormous amount of work to be done in the field of Arctic archaeology and ethnology, considerable studies have been made; some of these works unfold a fascinating story, part of which I hope to relate here.

The deposits of jade (the term here includes both nephrite and jadeite) used by these people probably occurred all the way from the state of Washington to north Alaska and possibly to Coronation Gulf and southern Baffin Island in the Canadian archipelago. Although the deposits in Washington are not certain¹ nephrite boulders are known to have been found in the Fraser² and Thompson Rivers in British Columbia. Other finds which have been reported are on the upper Lewes River³ in the Yukon Territory not far from the eastern boundary of Alaska, and on the Rae River in Coronation Gulf (see accompanying map). The least certain location is on southern Baffin Island and will be discussed later. We do know, however, that these last three sources were utilized by the natives. Further as far as I know, the source of the boulders on the Fraser and Thompson Rivers has not been located.

Surpassing by far all these deposits, however, are those in Alaska. They have

been known to the white man for almost a century. Briefly described in an article in this magazine in January, 1945 (p. 12), they are located approximately five miles north of the Kobuk River and about seventy miles from the coast. In this area (see map insert for precise location) float and bedrock occurrences of the nephrite variety of jade have been found. Only a small percentage is of gem quality but this amount is excellent, being a pale to deep green translucent material. In the past the float occurrences seem to have been the more easily accessible and the more widely used. It occurs on the Shungak (Eskimo word for jade) River and in Jade Creek. An especially good location is at the mouth of the Shungnak River canyon. The bedrock occurrence is found in two outcrops, one located about a half mile and the second about a mile north of the mouth of the canyon. In addition another deposit is found on Shungnak Mountain adjacent to an asbestos deposit. This is also nephrite. In some places this nephrite variety of jade occurs near or with asbestos deposits as one of the alteration phases of the ultra-basic rocks of the region.⁴ These ultra-basic rocks are intruded mainly in schist and limestone. Unfortunately the area has been little prospected and much of it is unknown, so there may be other occurrences as well.

In 1944 and 1945 about one thousand pounds of this material were shipped to a Wyoming dealer. When I was in Kotzebue in 1950 I secured a small specimen of this type of jade. According to an article in the December 28, 1951, edition of the local newspaper there, the "Mukluk

¹ The natives are said to have collected nephrite on the beaches of Puget Sound and in southern Oregon.

² The nephrite occurs in water-worn boulders near Lytton in the Fraser River Valley.

³ The Lewes River is a tributary of the Yukon River.

⁴ The asbestos in this area, in the form of tremolite, is of high quality and occurs on Dahl Creek among other places. It commands prices from \$400 to \$1000 per ton.

Telegraph," a new company has been set up to exploit the deposits.⁵

The Eskimo have known about these deposits for centuries and have made extensive use of them. The earliest known use of this mineral in the Alaska region was at the Ambler Island site.⁶ This was an old village of about fifteen house ruins located on the Ambler River, one of the largest tributaries of the Kobuk, which joins the mainstream about seventy-five miles below the present village of Shungnak. The date of 1730 was arrived at by the use of tree-ring dating (dendrochronology), from old roof beams excavated from semi-subterranean sod houses. These people were inland Eskimo, living a semi-nomadic existence dependent upon the local resources, hunting, fishing, and gathering berries and greens.

The outstanding characteristic of this

⁵ The new company to exploit the local jade deposits is known as the Imperial Jade Company of Kotzebue, Alaska, and plans to mine and distribute Alaska jade beginning last summer (1952). The majority of jade, not of gem quality, is valued at \$4 lb. and will be used for monuments, fireplace fronts, decorative tiles and abrasives. According to this account several previous attempts to exploit the deposit have been made both by individuals and by large mining companies but none have been successful.

"The jade occurs in both lode deposits and large boulders, some of which weigh an estimated 100 tons. The boulders have been found to contain the best jade but previous attempts at cutting and removing these have failed. The new company has developed and applied for a U. S. patent on a new low-cost cutting process. A small hydro-electric and a diesel electric plant will be installed."

⁶ The only earlier use of jade in Alaska seems to have been a jade whetstone found on St. Lawrence Island. It was found at a depth of approximately 11 feet, apparently in association with Old Bering Sea types of harpoon heads. This would date the specimen earlier than 500 A. D., and as far as is now known this would make it the oldest specimen of jade yet found in the Arctic. It is a small, round object with a perforation in one end, which, as will be shown later, required a great deal of workmanship. As to how this specimen came to St. Lawrence Island, there seems to be a good chance that it was traded from the mainland, possibly from the Kobuk area.

site, however, was the extensive use of jade. In fact it is in direct contrast to most of the other archaeological sites in the Arctic, where slate, quartzite, quartz, flint, chert, obsidian and soapstone are the most common minerals with which the early inhabitants made their tools. The jade used here came from the mountain near the Ambler River. From it they fashioned *ulos* (the woman's semi-lunar knife), drill bits and adze blades. Implements for working the jade were also found, including thin stone saws for cutting the jade and large shallow grindstones probably used for shaping it. Beside these jade implements artifacts of antler, willow bark and stone were also found. Working chips were relatively rare on Ambler Island, probably indicating that the houses were lived in for only a brief period.

Although the Ambler River site of only two centuries ago is the earliest reference I could find about the extensive use of jade by the Eskimo in Alaska, I think there is a chance that they used it as early as 1,000 years ago—for jade implements this old or even older have been found at several sites in the central and eastern Arctic. Six implements of nephrite were found at Cape Dorset in 1925 at the first site of what has been called the Dorset Culture, estimated to have ended about 1,000 A.D.⁷ At that time Diamond Jenness, who made the discovery, remarked, "I have seen no nephrite implements from any district east of the Mackenzie River delta, except these six from Cape Dorset." In the same article he mentions the deposits of "thin beds of soapstone and some nephrite or jade" observed by Rae on the river which now bears his name. These notes were made about the middle of the 19th Century. Jenness, however, did not seem to think that these deposits were used by

⁷ This date, however, is open to question, and some authorities believe that this culture existed for a time side by side with the Thule culture, which followed it. In some places it may have lasted until relatively recent times.

the Eskimo, for he states that, "Probably the mineral exists in a small deposit, little known and seldom utilized, somewhere in the south of Baffin Island." (I could find no mention of this deposit in the geological literature, although among the mineral deposits of Baffin Island are listed asbestos deposits at Nuwata. It is possible that geological conditions have been favorable to the creation of jade here). Some years later, however, in his excellent book, *The Indians of Canada*, Jenness mentions in a footnote (page 112), "Some Eskimo ruins in the Hudson Bay area and in Newfoundland contain small implements of nephrite whose source has not yet been discovered."

A drill point of nephrite has been found on the Belcher Islands in the southern part of Hudson Bay. Jade implements have been found on several occasions in the Dorset culture archaeological

sites in Newfoundland as well as on the shores of Hudson Bay. These Dorset Eskimo were the ancestors of the more recent Eskimo, occupying the whole north coast of Newfoundland before the coming of the white man. Here have been found polished nephrite blades of a dark green to almost black variety. Jade implements have also been found in the two Dorset culture sites in the northernmost part of Labrador. These specimens were first chipped and then ground into shape. Here too, sandstones were found associated with the jade artifacts; it is thought that these were used as rubbing stones to polish the nephrite implements. In actual experiments it was found that these rubbing stones polish nephrite fairly quickly, giving it a high polish.

Aside from all these Arctic localities nephrite objects have been reported from New Brunswick, Connecticut and even



Key to sites mentioned

● GEOLOGICAL

▲ ARCHEOLOGICAL

1 - Kobuk River area
see insert - ▨

A - Ambler River

2 - Lewes River

B - Belcher Islands

3 - Rae River

C - Cape Dorset

D - northern Labrador

E - west coast of Newfoundland

the interior of Ohio.⁸ These occurrences, however, raise the question—what is the source of the jade? As far as I can determine no jade deposits are known in Newfoundland,⁹ Labrador or the Central Arctic east of the Rae River. If there were no local deposits jade must have been secured through trade. This is not as surprising an answer as it might seem at first since, especially among nomadic people like the Eskimo, individuals have traveled enormous distances. It should not surprise us, then, that over the course of several hundreds of years objects which passed from group to group were dispersed over great distances. For example, in the Ipiutak culture of the northwestern coast of Alaska (Point Hope), which is about 2,000 years old, a bit of iron was found; this iron was subjected to chemical analysis and was found to contain no nickel, so it could not be meteoric in origin—it is thought, therefore, that it was traded to Alaska from central Asia.

We know definitely that nephrite was traded from the Kobuk as far as the Mackenzie delta, and according to Ball jade, presumably from Alaska, reached the Eskimo of the west coast of Hudson Bay and Baffin Island as early as the "Thule" stage of culture, about 1,000 years ago. Obviously the whole matter is still an open question, yet on the basis of present information available to me the most logical explanation seems to be that jade was traded extensively over the Arctic by the Eskimo, as indeed was soapstone, cop-

per and other scarce items.¹⁰ On the other hand, since in certain areas far removed from the Kobuk, such as northern Labrador, jade may have been worked on the spot. It would seem that possibly local deposits may someday be rediscovered.¹¹

Concerning the most elaborate use of jade by the Indians of the Northwest Coast and by the Eskimo in Alaska within historic times, we have a great deal of fairly detailed information. In George Emmons' pamphlet about the use of jade by the natives of Alaska and British Columbia there are a number of very fine color plates of the jade tools and ornaments. The Eskimo seem to have had greater skill in working jade than did the natives of the Northwest coast of Canada.

Even so, jade was a very important item in this part of Canada. We are all familiar with the beautifully carved totem poles from this area and the magnificent ocean-going canoes (an excellent one is on display in the American Museum of Natural History in New York City). Emmons claims that much of this wood-working was done with a jade celt which has a tough, keen edge. Thus among the Tlingit Indians of British Columbia a jade adze-blade two or three inches long was worth from one to three slaves. Also, when its owner used it, his wife was supposed to refrain from all "frivolity", as any unbecoming conduct on her part might cause the blade to break. Although jade adzes were undoubtedly important, I do not believe they were that significant, because many recent students of the problem seem to feel that the culture of the Northwest Coast Indians reached its peak

⁸ These three localities will not be considered as this discussion is limited to the Arctic areas.

⁹ Despite this there seems to be a possibility that jade may occur there since there are olive rocks containing asbestos in the Gander River region of Newfoundland, and possibly elsewhere.

¹⁰ The situation is by no means clear since if jade was traded as far as Hudson Bay, Baffin Island, and Newfoundland why did these people of Dorset times not also acquire ground slate implements and the bow drill from the Western Eskimo of this period?

¹¹ It is, of course, also possible that the jade may have reached a place such as Newfoundland or Labrador from aboriginally known deposits in the western United States since jade was widely traded there. I think, however, that this is less likely as I have no facts on which to base this supposition. More dating may help clear up some of these mysteries.

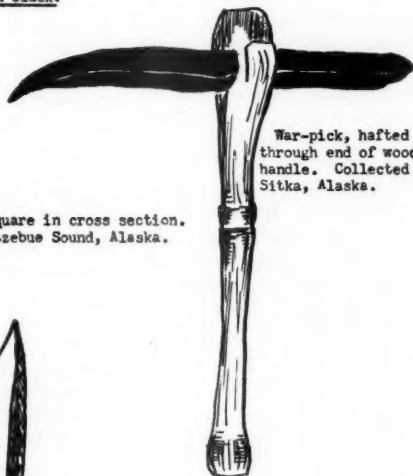
of development after the coming of the white man to the area, beginning in the latter part of the 18th Century, when the natives obtained iron tools. Sometimes jade was used by these people as amulets, but they did not make ornaments as did the Eskimo. Perhaps the best of the Indian implements was the war pick, of a bright green translucent jade, which was used on ceremonial occasions to kill slaves (either war captives or impoverished people in their own tribe). Used by the Tlingit, Tsimshian and Haida, it was primarily a war club. From eight to seventeen inches in length, it was hafted through or at the end of a short stout wooden handle. This precious implement was quite rare and was possessed only by the greater chiefs.

Turning now to the modern Eskimo (late 19th and early 20th Century) it can be said that before modern industrial products replaced their crafts, they made a much wider variety of implements and ornaments from jade than did the Northwest Coast Indians. Among their products were celts, adzes (arching blades, hafted perpendicularly to the handle), hammers, harpoons, spears and arrow blades, *ulos*, skin scrapers, whetstones and labrets. The last three items are perhaps the most interesting. The importance of the skin scrapers is obvious since not only the Eskimo's clothes but also his tents, boats, dog-harnesses, and even his hunting and fishing gear was composed of skin and sinew. Therefore these scrapers used for the removal of fat and adhering

Jade parts are those shown in black:



Hand chisel, square in cross section. Collected on Kotzebue Sound, Alaska.



War-pick, hafted through end of wooden handle. Collected at Sitka, Alaska.

Spearhead used for the capture of walrus and whale, made of blade of jade fitted into a bone head by means of bone pins. From Kotzebue Sound.



Two views of a jade labret. The button (a) is for insertion and the outer face (b) is ornamented with a narrow groove and beveled ends.



Skin-scraper of the type used by the Eskimo of northern Alaska. The blade is set in a shaped and grooved handle of extinct mammoth ivory.

bits of flesh from the hides were very widely utilized. (It should be noted, however, that in most areas slate and flint were more commonly used for this purpose).

The whetstones were used for sharpening their knives. The stone varied from two to nine inches in length and was carried suspended from the belt by a seal-skin thong which passed through a hole in the top part of the stone. It may surprise some that the Eskimo were able to drill holes in jade. What they probably did was to first make deep longitudinal grooves in one or both sides and then complete the work by using narrow jade blades and chisels. They also had drills made of bone, flint and jade to assist them in their work, manipulating them by means of a bow drill. To make the original grooves they sometimes used sandstone saws about one inch long, $\frac{1}{4}$ to $\frac{1}{2}$ inch thick and three to four inches wide. Before this they would make an initial scratch with a piece of quartz, to give the saw a place on which to catch. These primitive saws were lubricated with water, and of course their edges had to constantly be sharpened, but they were nevertheless effective. Stefansson says that they used a sharp cottonwood stick the edge of which was first dipped in water and then in dry sand. The jade was then smoothed by rubbing it on a sandstone. This was, as every lapidary will testify, very hard tedious work.

The crowning achievement of these Eskimo gem cutters was their labrets. These were ornamental lip plugs, which passed through the lip and rested against the gums. They were usually worn by the men and were handed down as heirlooms from generation to generation. Often, they had two of their four sides rounded and then beveled at both ends.

It might be interesting to know where some of these relatively sophisticated achievements fit into some all-embracing classification of the Eskimo as a "Stone Age People."

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World News on Mineral Occurrences

Items on new finds are desired. Please send them in.

Abbreviations: xl—crystal

xld—crystallized

xline—Crystalline

ALABAMA — Pyrite has been mined near Pyriton, Clay Co., Ala.

ARIZONA — O. P. McMican, P. O. Box 1793, Prescott, Ariz., was given a nice write-up (plus his picture) in the Feb. 27, 1953, issue of his local paper, *THE MESSENGER* (Prescott, Ariz.). Mr. McMican, who is secretary-treasurer of the Yavapai Council, Arizona Small Mine Operators, collects rare rocks as a hobby. Some minerals in his collection are very fine turquoise specimens from Turquoise Mountain, Castle Dome, near Globe, Gila Co., Ariz.

ARKANSAS — Good museum specimens of brookite, as shiny black xls, have been found in Magnet Cove, Hot Springs Co., Ark.

CALIFORNIA — Mrs. Margaret Bensusan, 8615 Columbus Ave., Sepulveda, Calif., has sent in 3 interesting specimens along with the following notes, dated Dec. 13, 1952:

"Three specimens from the Governor Mine (old New York Mine), a gold mine in the Mint Canyon area, West San Gabriel Mts., Los Angeles Co., Calif., 3 miles N. of Acton, a station on the So. Pacific R. R.

"One of the largest producers in the county, it has yielded over 2 million dollars worth of gold. Worked intermittently since about 1880; now idle. Name was changed to Governor Mine when the property was acquired by Gov. Gage of California.

"The principal rock of the district is granodiorite. The vein is a quartz-filled fissure in quartz-diorite. Mineralization consists of iron sulphides and free gold.

"Ref: Calif. State Mineralogist's Reports, IX, p.192; XV, p.476; XXIII, pp.294-5."

The specimens are:

No. 1—Typical quartz-diorite ore, showing chalcopyrite.

No. 2—Typical ore with one surface slickensided, with red staining from opposing rock, probably red sandstone (there are 2 or 3 faults on this property).

No. 3—An interesting specimen showing contact of brown, banded rhyolite and massive smoky quartz; the surface of the quartz shows drusy milky quartz.

A letter, dated March 24, 1953, comes from Gordon D. VeGario, 2231 Pine St., Bakersfield, Calif. It reads:—

"Please except these 3 small xls of hanksite (enclosed with letter) from Searles Lake, Trona (San Bernardino Co.), Calif. These are representative of many such xls collected by me at Searles Lake.

"Searles Lake is a salt crusted brine lake. There is a plant there that processes the mother liquor pumped up from a depth of about 125 feet. Hanksite as well as other minerals are recovered from well borings brought up from the lake crust.

"In my personal opinion this mineral locale is one of the most interesting of all collecting grounds. It is, however, quite difficult to obtain permission to collect there. It was through a mutual acquaintance that I was able to contact the production manager for a guided tour of the grounds.

"The following is a list of minerals that I collected there or were given me by the foreman:—

borax	northupite (rare)
burkeite	pirssonite
gay-lussite	sulfohalite (rare)
glauconite	thenardite
glazierite	tincal
halite	trona
hanksite	tychite (very rare)

"If any reader of R & M is interested in the minerals of Searles Lake, they are most welcome to write me."

Not too long ago we received an assortment of pumice boulders (up to 5" in diam.) that were sent us by Mrs. Lera A. Hegel, 1945 Magnolia Ave., Los Angeles 7, Calif. A note with the pebbles reads:—

"Here is a novelty for your rock collection. They are pumice stones picked up as "float" at Frink Siding on the S.P.R.R. about one-half mile north of Salton Sea toward Eagle Mountain where the Kaiser Steel Co. has its iron ore mine. Pumice is grey but this is stained red by the red mud, and these stones float on water in the dry washes after flash flood storms."

Pumice is an excessively cellular glassy lava which is so light that it will float on water.

COLORADO — From Mrs. Effie M. Gunn, 1012 Main St., Canon City, Colo., we have received an interesting item clipped from her local paper, *THE DAILY RECORD*. Her letter, dated Feb. 5, 1953, reads in part:—

"You will find enclosed with this letter a clipping from our local paper which may be of interest to you. Last month a picture of the coelacanth fish appeared in papers all over the country, with a news item about one of these supposedly extinct creatures having been caught alive off the coast of Africa near the island of Madagascar. Fossils of the coelacanth have been found for many years in Canon City (Fremont Co., Colo.), and in all the books which mention them, Canon City is the only spot which is actually designated by the name of the town. All other mentions of localities in which these fossils are found are made generally, with only the name of the country, such as Germany or Austria."

The clipping showed a picture of the 350 million year old fish and an interesting story part of which reads:—

"F. C. Kessler, member of the Canon City Geology Club and curator of the Canon City Municipal Museum, said re-

mains of the "extinct" coelacanth fish—regarded as the first form of vertebrate life—are found in only three places in the World, Germany, Austria, and Canon City.

"Locally, Kessler said, remains have been found west of Soda Point in the "saddle trail" that leads to the top of Fremont's Peak.

"The Geology Club has worked these diggings for several years and has had fair luck in finding fragments of the fish, he stated."

CONNECTICUT — Good beryl xls, averaging about 2 inches in size, were common on dumps, 10 years ago, at the small abandoned Pelton feldspar quarry near Portland, Middlesex Co., Conn. The xls were green in color, often gemmy in quality, and were either loose or imbedded in smoky quartz.

DELAWARE — The following letter, dated March 28, 1953, comes from Joseph E. Godin, 35 W. Hoffman Ave., Lindenhurst, N. Y.

"I would like to inform you of a find of petrified wood in Delaware. Perhaps you know about it, but in case that you did not know, it is located near Clinton, Kent County, Delaware, about 40 miles south of Wilmington and was found about ten feet in the ground by someone who was digging for sand.

"Although it is in solid rock form, the annular rings are extremely prominent. It looks like a piece of ordinary wood (perhaps spruce) except that it is very heavy when you take it in your hand.

"The person that gave it to me said that there was a stump in the sand pit that might weigh several tons; as a matter of fact, the sand diggers had to go around it."

FLORIDA — A letter dated March 1, 1953, comes from Jno. L. Bell, 408-410 E. Franklin Ave., Gastonia, N. C., who at the time was in Fort Lauderdale, Fla.

"I am mailing you a small box of minerals that come from New River

which flows through the north part of this city (Fort Lauderdale, Broward Co. Fla.). A developing Co. is digging the river about ten ft. deeper and are taking quantities of the limestone formation out in order to form lots for building new homes."

Six specimens were received and they were: 2 cream colored xline limestones, a cream colored calcite pseudo after coral, golden yellow xline calcite on grayish limestone, a cream colored calcite stalactite, and a gray coquina limestone (limestone made up of fossil shells) —all very nice specimens.

GEORGIA—Chromite has been found in Towns County at Hog Creek near Hiawassee, Ga., as minute black xls disseminated in chrysolite.

IDAHO — Small specks of native copper in nodules of cuprite have been found in the Empire copper mine in the Alder Creek dist., Custer Co., Idaho.

ILLINOIS — In southern Illinois, in Pope County, is the little town of Rock and we have often wondered how it got its name. The following letter, dated April 2, 1953, gives us the answer; it was sent in by John F. Mitchell, Box 205, Golconda, Ill.

"In reply to your letter of March 28th, requesting information on the city of Rock (Pope Co., Ill.), I went to Rock the day I received your letter.

"On the road to Rock (which by the way consists of 4 houses and a general store) numerous outcroppings of sandstone bluffs can be seen. One group of bluffs was about 45 ft. high. We concluded this was the reason for the name. If you wish I can send you a rock from Rock. (Just imagine a rock from Rock!).

"I have received a letter today from Lyndall Grosch, 6958 Mardell Ave., St. Louis 8, Mo., saying I am first on the list of paid up registrations at Midwest Convention. Are you going to the Midwest Federation Conv. in June?"

INDIANA — Indiana is noted for its fine geodes, which are found in a number of counties, but we believe a new locality has been discovered (in Washington Co.) by one of our subscribers. At any rate, here is his letter, dated March 29, 1953, sent in by Harry M. Woodward, 1114 Groesbeck St., Cincinnati 24, Ohio:—

"Knowing that you made a trip thru Ohio, Indiana, and Kentucky two years ago, I thought you might be interested in some geodes found yesterday in southern Indiana.

"From Brownstown, Indiana, reached on route 50 from Cincinnati, Indiana Route 135 goes to the left. Half way between Brownstown and Salem is a graveled road, branching off to the right. At a red schoolhouse, you take a road to the left and follow to Rush Creek. The geodes are located all thru this area, and it is not hard to fill up the car.

"They are obtained about 15 miles from a so called "road"! — 12 miles from a highway and 126 miles from Cincinnati. Actually, I found them on a rumor. I was in Indiana, on a two day rock hunt and with some success, but wanted to find a place for more sphalerite, in geodes. On a fence, near a farm house at Brownstown, Indiana, was a row of geodes. Some kid had placed one on each fence post. I stopped and asked where they were obtained and was told in Rush Creek — about 7-8 miles down the road. So off my wife and I went down the road — 8-9-10-12 miles but no sign of a creek. I stopped at a farm house — it was deserted — but had geodes all over the yard — walked back to the car just as a car approached down the dirt road and I waved the driver down. He told me that I had passed the road several miles back! So I turned around and finally found a real cow path over the hill to the right — and Rush Creek turned out to be all of a yard wide but filled with geodes which had washed out of the banks. I dug some out of the bank and found they had quartz xls, calcite (dog tooth) and once in a

while sphalerite. Total distance from the paved road — 14 miles, all dirt road — not advisable in wet weather.

"I am sending you several geodes. Did not mention that these geodes run from 1" to 30 inches! (in diameter). Hope you like them."

Two nice sections were sent us by Mr. Woodward. One consisted of lustrous little rock xls, the other consisted of colorless calcite xls.

IOWA — On July 2, 1952, while on the way to the St. Paul Convention, we stopped in Fairmont, Minn., to call on a good friend, A. F. C. Heiser (it was our first meeting). On leaving, Mr. Heiser loaded us down with specimens one of which was a very nice dark green verde antique marble (serpentine — 2 x 2 in size — sawed and polished by Mr. Heiser).

The locality for the serpentine was Arnolds Park, Dickinson Co., Iowa, on the farm of John Kilts.

KANSAS — Tiny black lustrous magnetite xls occur imbedded in the rock of a volcanic plug, a low knob about 20 ft. high and 200 ft. in diameter, near Bala, Riley Co., Kans.

KENTUCKY — A recent note from Bob Barnes, 3930 Brookfield Ave., Louisville 7, Ky., tells us:—

"Chinn's Calcite Mine, Mundy's Landing (Mercer Co.), Kentucky. Nice calcite twins are found here but it takes a lot of digging through the dump to find them."

LOUISIANA — If some of our subscribers don't send us soon a few notes on Louisiana, the Editor threatens to send his cousin Emily down to work in the salt mines and have her dig up a few minerals for us!

MAINE — We have had some interesting correspondence with William P. Hinckley, R.F.D. 3, South Brewer, Me., relative to a rare mineral that he had found in Perry, Washington Co., Me. In

his letter dated Aug. 24, 1952, he writes:—

"We have been spending the summer in far eastern Maine, where I have been assigned to work temporarily. In this area there is a peculiar formation which has been described in Prof. Paper No. 35 of the U. S. Geological Survey (Washington, D. C.), "The Geology of the Perry Basin in southeastern Maine." This section has been studied many times since about 1835 because of the many physical likenesses to another formation in Canada, not too far distant, which contains coal. The portion of the formation from which my specimens were collected is referred to as the "lower lava member". This consists of lava containing amygdaloidal cavities which have been filled with infiltrated minerals of several kinds. These may vary from tiny nodules to those of two feet in diameter, though any larger than a golf ball are uncommon. The most common mineral is calcite which may be found in nice cleavages in the large nodules and which is perfectly transparent in the very small ones. Next most numerous are nodules or geodes of quartz only a few of which have cavities, but rarely one may contain amethyst crystals. Some cavities are lined with prehnite and some xls of this mineral were found. The prehnite does not seem to have filled any of the cavities completely. Some of the nodules contain three or even four minerals. I am sending you an assortment of minerals found here (calcite nodule, quartz nodule, pale green "serpentine" nodule, nodule of pinkish calcite and gray chalcedony, green prehnite).

"On the beaches near this area one may find many agates but they are of poor quality and usually reddish; typical specimen is sent you (this turned out to be a deep red carnelian pebble 1" in diam.)."

The second letter, dated Nov. 6, 1952, reads:—

"Some weeks ago I sent you some mineral specimens requesting identifications. I received your very prompt reply for which I wish to express my

thanks. One of these minerals, of which I sent you only a very small portion of a nodule, has recently aroused my interest because of its peculiar behavior. When found it was olive-green and very soft — almost like a lump of cheese. It filled cavities in basalt, and was found below the high tide line on the shore (at Perry). By the time I had sent it to you, it had become hard enough so that it could barely be scratched by finger nail; but otherwise its appearance had not changed. Two weeks ago I discovered that my specimens had all turned chalky white. Since I wanted to have some of this material in the original form, I went to the place this is found and again located some rock containing these nodules. I trimmed down a few specimens and laid them on a rock, and went back to digging. In a few minutes I had a few more pieces to lay aside, but I was greatly surprised to find that the first lot had already turned hard and become white and chalky on the surface. In short what took weeks with my original samples now seems to take place in about 10 minutes. I finally managed to get several rocks home, but thus far I can find no way to preserve them in the natural state in which they occur other than by keeping them under water.

"As an amateur collector this state of affairs raises several questions. First of all, is the mineral serpentine? Or is it saponite? Is it desirable to go to great lengths to preserve specimens in the form in which they are found to occur? Do you know of any more practical way to keep such specimens? Is the stuff likely to keep indefinitely in water? Any comments you may have will be appreciated. Can you even guess why the first lot kept so much longer than what can be collected now?"

The peculiar behavior of this mineral is something new to us and our suggestion to Mr. Hinckley is to experiment. It is only too evident that the mineral needs water to keep it in its original state — perhaps a lot of water or perhaps only a little. A nodule or two could be immersed in water in a tightly sealed jar. Another jar could be half filled with sand, water

added to thoroughly saturate the sand, then a nodule or two dropped on top of the sand and the jar sealed. These two jars should be dated, set aside, and watched for a few weeks to see if any change takes place in the nodules. One of these methods might work or might give an idea for another and better experiment.

The first lot of specimens might have been collected on a cool or damp day while the 2nd might have been collected on a warm day and exposed to the sun.

A third letter, dated Dec. 2, 1952, reads as follows:—

"I am sending you a package containing some nodules in matrix as well as several loose ones. I have packed them in wet sawdust and cotton sealed in a can and it certainly should keep them wet.

"These specimens were collected as large rocks from the shore near the high tide line. They were in place but cracked free from the ledge and were partly buried by sand. They were kept under wet sawdust for a week (in Perry) and then after about a 6 hour trip home by car they were placed where water dripped constantly onto them, and these large rocks were cracked up only today.

"The green nodules, which have been softened by long soaking in water, can be scratched by the finger nail, and really dug into by hard dry finger nails."

We have been so swamped with work for the past 6 months that we just could not find time to unpack the wet nodules and give them a thorough examination. We are, therefore, relying on Mr. Hinckley's observations and our examinations of the dried 'serpentine' nodule received in the first shipment.

It seems only too evident that Mr. Hinckley's mineral is saponite, a hydrous silicate of magnesium and aluminum. Although a rare mineral, it has been known for many years. In 1844, for example, Alger (Alger's Mineralogy, Boston, 1844) wrote that the mineral occurred in the deserted mine of Brucksvad and Svartvik (both in Norway). In the latter locality it is found in clefts of not more than two inches in thickness, and when taken

out in a wet state, is so soft that it may be spread like butter, so that some of the miners tried to eat it as a substitute for butter at first, but found it something very different. In the air it hardens gradually, but falls to pieces in drying, and the pieces become a soft powder. After drying and hardening in the air, it has about the hardness of talc, so that it may be easily scratched with the nails. In water it falls to pieces quickly (take note of this, Mr. Hinckley) (p.632).

Saponite is white, yellowish, grayish, green, bluish, reddish. Does not adhere to the tongue. Its name, saponite, is from the Latin for soap and was so named by M. Svanberg.

MARYLAND — At the Gwynns Falls Gneiss quarry, in the city of Baltimore, Md., nice black tourmaline xls have been found.

MASSACHUSETTS — The following interesting note, dated March 12, 1953, comes from John E. Kitson, 30 Briggs St., Easthampton, Mass.

"A few days ago Joe Rapalus and I visited the Lane trap rock quarries near Westfield (Hampden Co.), Mass., and found what appears to be another "first" for this area. You'll note the well developed amethyst phantoms in the specimen xls I have enclosed in this package for you.

"We think that you'll agree with us that the amethyst xl grew first and was then sprinkled with nodules of prehnite (green), following which the crystal growth was again renewed and the amethyst and its prehnite decorations were encased in an envelope of clear quartz."

Two small xls were received and they showed amethyst phantoms with prehnite inclusions in rock xls.

MICHIGAN — A letter, dated Jan. 13, 1953, comes from Harold W. Moll, 1755 Isabelle Rd., Rt. 5, Midland, Mich. It reads:—

"About 2 years ago the surface exposed limestone pits have been opened on the west side of the Battle Creek Riv-

er 10 miles N.E. of Battle Creek, (Calhoun Co.), Michigan. These deposits were operated years ago in connection with a cement plant. From 5 to 25 ft. of sedimentary limestone, under 4 to 25 ft. of glacial drift, lays over a dolomitic limestone. In some places remnants of crinoid beds and fossilized coral may be found. There are a few univalves and bivalves in these places. There is evidence of primary and secondary activity in the bed. Explosive? breccia consisting of dolomite, some sandstone and limestone are found. The breccia is not continuous but are in chunks from 2 ft. to 10 ft. in average diameter. Because they are low in calcium content they are bulldozed aside and used as fill.

"A series of cracks (faults) run from N.E. to S.W. in the limestone (I have followed 2 for nearly $\frac{1}{2}$ a mile during the past 2 years). The edges of the cracks are covered with pyrite and marcasite from $\frac{1}{2}$ to 1" in depth and the rest of the cavity filled with calcite. Now and then cavitation occur and several nice calcite forms have been recovered. Dogtooth types are common. In general the crystal masses are small.

"Crystalline and massive marcasite may be found. Limonite, massive and stalactitic, goethite, pyrite, and other iron forms are common. One breccia area has pyrolusite and psilomelane and purpurite. All the limestone shows a set amount of phosphate and the purpurite is probably a result of weathering. Now and then very hard concretions are found that when broken show nice specular forms of hematite.

"The pit is being worked by removing the overburden, blasting the limestone and crushing, hence specimens are not as easy to find as at a mine dump, for instance, but it always provided me with one or two new specimens or forms at every visit."

MINNESOTA — A number of interesting specimens have been received from Walter Rahn, R.2, Lewiston, Minn. But first, let us look at his letter, dated Dec. 12, 1952.

"Am sending you under separate cover some minerals which I find in several counties in southeastern Minnesota. Would like to know what they are. I find them in almost every shape — melted around pebbles and limestone, some are hollow, some look as though there are twigs or bones melted in them, etc. What are the minerals?"

The minerals are all dark brown limonite — some are broken geodes, some are concretions, others are cellular masses. The locality for them is in Olmsted County, Minn., about 12 miles north of Rochester, on the banks of the Zumbro River.

MISSISSIPPI — Limonite beds, up to 20 inches in thickness, occur near Reedsville, Itawamba Co., Miss.

MISSOURI — From Roger Maserang, Box 395, RR 1, East Carondelet, Ill., we have received a specimen of white, slightly altered, chert (quartz), which he had collected from a rock outcrop along State highway 32, at Banner, Iron Co., Mo.

MONTANA — Ray D. Stratton, Worden, Mont., sent in a large clipping taken from his local paper. The caption for the clipping was "Montana and Wyoming have many famous rock formations." This is a most interesting clipping and it is illustrated with 3 good photos.

NEBRASKA — Flint has been quarried for crushed stone at Blue Springs, in Gage Co., Nebr.

NEVADA — A nice specimen of silvery-white muscovite flakes (stained brown) and coming from Mina, Mineral Co., Nev., has been received from Al Thrower, P. O. Box 305, Santa Cruz, Calif.

NEW HAMPSHIRE — We have received a number of interesting notes from David M. Seaman, 51 Ralph Mann Dr., Stoughton, Mass., and the following are some taken from his letter dated Oct. 27, 1952.

"Visited the Chandler Mine at Raymond (Rockingham Co.), New Hampshire, in May and collected some light orange-colored one-quarter inch dodecahedral crystals of garnet embedded in lepidolite which turned out to be the species, spessartite. These are the only spessartite garnets I have seen in lepidolite with the exception of some one-half inch trapezohedral crystals and one inch dodecahedrons of identical color from the Harding mine of Taos County, New Mexico. Lepidolite of a good, deep lavender color such as the Raymond mineral is extremely rare in New Hampshire. Other interesting minerals found in this quarry were pink beryl in crystals and masses with beautiful dendrites of pyrolusite along basal cleavages, spodumene crystals to eight inches in length, and some small columbite crystals. Lithium pegmatites are very rare in New Hampshire. No colored tourmalines were found with the lepidolite in this pegmatite as is often found as associates with the lepidolite in Maine; only the common black variety.

"Just a word of caution regarding this locality. While this is an interesting quarry from which to collect minerals, be sure to get the permission from the owners who live nearby before entering the property for there have been some recent thefts of beryl by someone with a truck and with beryl bringing near \$400 per ton, the quarry has been posted and trespassers will be prosecuted.

"Also collected from the Smith Mine at Chandler's Mill near Newport (Sullivan Co.), New Hampshire, in October and while I did not get many specimens this time, only a few one-half inch crystals of triphylite and some lazulite masses, I have collected some interesting minerals here over a period of two years. Among these are one inch triphylite crystals, parallel growth groups of semi-transparent brazilianites to an inch and a half in length and tiny transparent single crystals both in a greenish-yellow color, one-half inch pyritohedrons of pyrite, small green and colorless apatite crystals, colorless and light brown scalenohedral cal-

cite crystals, tiny rhombohedral siderite crystals; and hurlbutite (the recently announced new calcium-beryllium phosphate mineral), in crystals to one inch in diameter including one matrix specimen of three crystals grown together with crystals from one-half inch to three-quarters of an inch along the edge which is now on exhibition in the Harvard Mineralogical Museum. A number of pseudomorphs have also been found here as muscovite pseudomorphs after black tourmaline and a few muscovite pseudomorphs after beryl as well as fairly common pseudomorphs of siderite after hurlbutite crystals. Beryllonite and amblygonite in twinned crystals have also been identified.

"This quarry was worked during the past summer for mica but was not working at the time of my October visit. I had made arrangements with Mr. Richard Blodgett Jr. of Windsor, Vermont, to meet him at the quarry. He showed me a crystal of brazilianite which he had recently collected from the quarry which is the largest and best I have seen from New England. It was essentially a single crystal about three-quarters of an inch in diameter and an inch and a half in length and doubly terminated. While we were at the quarry he collected a quartz crystal about an inch in diameter and length in a vug in pegmatite which is the largest quartz crystal from here which I have seen. Recently he sent me a specimen showing a stalactitical crust of radiated growth on quartz crystals of a yellowish-orange color which has proved to be francolite, a carbonate variety of apatite. The new workings have not revealed any additional hurlbutite or triphylite crystals only the brazilianites and masses of lazulite.

"It is remarkable that such a small working perhaps a hundred and fifty to two hundred feet in length and forty to fifty feet in width and depth has produced practically all of the interesting minerals; the one near the house producing only small green apatite crystals, small masses of lazulite, and some beryl in golden and nearly white colors which is

found in both quarries. The productive quarry is the one on the hill across the road from the Smith's house. A dollar is charged to collect from the dumps by the Smiths' when the quarry is not in operation.

"It may be interesting to note that on a field trip to the Ruggles Quarry at Grafton, (Grafton Co.), New Hampshire last summer some trapezohedral, almandine garnet crystals were found which reached a foot in diameter."

NEW JERSEY — Arthur Jones, 307 Eastern Parkway, Brooklyn 16, N. Y., showed us a quartz pebble which he found February 23, 1952. The pebble was about 1 inch in diam., perfectly clear but waterworn, and was found in a digging for the foundation of a house near Milltown, Middlesex Co., N. J.

NEW MEXICO — Beautiful specimens of gold embedded in transparent calcite have been found in the New Placers district, Santa Fe Co., N. Mex.

NEW YORK — The following letter dated Feb. 9, 1953, is from Walter Busch 43-32 Elbertson St., Elmhurst, N. Y.

"This is to inform you that if you are interested in securing choice specimens of copper ore at the old Sing Sing copper and lead mine, at Sparta, N. Y. the specimen being malachite and azurite in limestone, you can collect them at your convenience. I was there this Sunday, went first to the upper tunnel and to the end of the tunnel but could find nothing. This tunnel was evidently driven to cut the vein at depth but must have missed it or was not driven in far enough. The people who own the land will not let you have access to the lower tunnel as they use the water in the tunnel for drinking purposes.

"Where I made my find was where the shaft was sunk. I was about ready to give up hope of finding anything when I pulled apart some bushes that were hiding part of the outcrop and hit the outcropping with my hammer and there was the copper. As the limestone is rather

shaley, superb specimens are readily secured. I secured a few choice what you could call museum specimens showing malachite (much) with azurite (less). The ore is stained with manganese or with some manganese salt. Also some yellow stains may be due to iron. There is plenty more to be gotten with a little work, but once someone finds it, it all will be gone.

"In the vicinity of this shaft is a lot of limestone stained with what seems like lead. I think this is the mine that the early accounts mentioned as being worked for lead. Some early accounts also mention that native silver was found here. There is some specular iron too in the ore. I do not know the history of this mine, but it must be an interesting one. Some accounts say the ore was taken to West Point by boat to be smelted there. Some reports have it that the prisoners at Sing Sing once worked some kind of a mine. This is the only mine that I know of in this vicinity, so all the accounts must point to this mine. I have an old specimen of xld. galena in limestone that reports it as coming from Ossining. Probably this mine. At depth there must be a vein of lead. It would be interesting to see what is at the end of the lower tunnel. By that I mean if the lead vein can be seen. Here is an interesting paragraph pertaining to this mine. "At the Sing Sing silver mine the vein is highly argentiferous, accompanied with masses and sheets of metallic silver. It was extensively worked by Sampson Simpson, Henry Remson, Colonel James, and others from the years 1764 to 1776, when the smithy houses were removed by the Continental army to West Point. Valuable specimens of the metallic silver have been preserved by the heirs of Mr. Simpson."

The old copper mine at Sparta, near Ossining, Westchester Co., N. Y., has been visited a number of times by the Editor of R & M, but good specimens were never found until Mr. Busch's letter induced him to go again. This time a rush visit was made to the old locality, accompanied by Eddie Bourne, and,

thanks to Mr. Busch's sketch, a number of interesting specimens were found — malachite as greenish incrustations on mica schist — (a few with bluish incrustations of azurite).

NORTH CAROLINA — Moss agate has been found near Hillsboro, Orange Co., N. C.

NORTH DAKOTA — S. T. Parke, Sterling, N. D., has sent in a most interesting specimen which he labelled "petrified mat". It is a large slab, $\frac{1}{2}$ inch thick, of dark gray thin bedded quartz in which are embedded a number of petrified light gray plant stems, the largest stem is $\frac{1}{2}$ x 7 inches in size. On the reverse side is a 2 x 5 inch layer of cherty quartz which fluoresces orange under the long wave light.

OHIO — A very nice loose white crystal of celestite, whose tip has a bluish tinge, and coming from West Millgrove, Wood Co., Ohio, has been donated by C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio.

OKLAHOMA — A letter dated Feb. 17, 1953, and coming from Allen Graffham, Box 418, Ardmore, Okla., gives some notes on an interesting locality.

"Lugert Granite. The coarse grained Lugert granite at the western end of the Wichita Mountains carries a number of crystal cavities in which the following have been noted: smoky quartz, riebeckite, hyalite opal, orthoclase, and capillary crystals of rutile. The rutile crystals were found in only one pocket by Univ. of Oklahoma students. Crystals of mica, vermiculite, are also occasionally, encountered as are crystals and cleavages of diallage.

"While collecting in this area in 1951 a cavity of quartz and orthoclase was located and excavated. The cavity was about 4 feet in diameter. The crystal groups were all broken from the walls of the cavity and were loose in a yellowish clay.

"Will send along other mineral items from time to time."

A second letter, dated Feb. 25, 1953, reads:—

"The best collecting in this area is in an abandoned quarry which is about $\frac{3}{4}$ miles east of the Lugert-to-Altus Highway. The turn off to the quarry is about a mile south of Lugert (Kiowa Co.) which is only a store and minnow stand. The rock from this quarry was used in construction around the very beautiful lake. The dam is just west of the quarry and the lake extends 15 miles to the north while at full reservoir capacity. There are some mineral localities (cavities in the granite) around the dam of the lake and along the road cuts leading to the dam. The large cavity I mentioned in my last letter was found in this quarry."

OREGON — A clipping, taken from the **MEDFORD MAIL TRIBUNE**, Medford, Ore. (Mon. Jan. 26, 1953), has been sent in by E. Bruce Wilson, 3715 Roberts Rd., Medford, Ore. The clipping is captioned "Nickel—From Oregon" and part of it reads:—

"Nobody seems to have gotten very excited about plans recently announced to mine and smelt nickel in Douglas county.

"Actually, it is one of the biggest developments in mining in Oregon since the discovery of gold at Jacksonville 102 years ago.

"The government's Defense Materials Procurement agency recently announced that Nickel mountain, near Riddle in Douglas county, would be mined. The deposit of nickel there is said to be the only major known deposit within the boundaries of continental United States. Nickel, of course, is a vital element in both defense and industrial production.

"And it's a big one. The companies who will do the job propose to produce from 95,000,000 to 125,000,000 pounds (47,500 to 62,500 tons) of the metal. The firms are the Hanna Coal and Ore corporation and the Hanna Nickel Smelting company, both of them subsidiaries

of the M. A. Hanna company of Cleveland, O. (from which, incidentally, George M. Humphrey, the new secretary of the treasury, resigned as president to take the cabinet post).

"The ore in Douglas county will be mined by the open pit method, and crushed at the site. It will be carried by conveyor down the mountain where it will be piled for recrushing, drying and smelting.

"The whole operation is of some significance to Oregon, and to southern Oregon in particular. This region is traditionally the mining region of the state from the early gold days to the present. Although activity has been curtailed in recent years, there are many mining concerns in this area."

PENNSYLVANIA — A letter from Aloysius J. Gruss, 11309 St. Mark Ave., Cleveland, Ohio, tells us about a rock crystal locality in Pennsylvania. The letter, dated March 6, 1953, reads:—

"Last September I spent my vacation in Elysburg (Northumberland Co.), Penn., where I located fine clear quartz crystals in a farmer's plowed field. That area is opposite the graveyard that is near Our Lady of the most Holy Rosary Catholic Church which is one mile west of Elysburg proper."

The Editor's short article on the beraunite — cacoxenite locality at Hellertown, Northampton Co., Penn., which appeared in the Jan-Feb. 1953 issue, p.12, has created considerable interest and more than one subscriber has expressed a desire to visit it. Since the appearance of the article, we have learned to our dismay that the noted locality has been obliterated. The following letter, dated April 1, 1953, has been received from Floyd R. Faux, 635-4th Ave., Bethlehem, Pa.

"Regret extremely to inform you that a trip to the old iron mine at Hellertown for cacoxenite, wavellite or beraunite would be wasted as the old glory hole has been purchased by the borough of Hellertown and has been used as a gar-

bage dump for over a year. There is absolutely no finding any minerals there at this time. It has been nearly all filled in and will be levelled and either added to the water-shed for the borough's municipal water supply or developed into some other civic spot.

"For years there were several large boulders which did contain a lot of the three minerals in very nice seams and cavities. One of these was broken by the writer and his friends and supplied several superb and many average specimens, the other was just yielding up several nice specimens when much to our surprise we found it covered several feet deep with garbage, thus ended another famous collecting spot. We had tried on several occasions to purchase the site from the owner, but she and the other heirs were adamant and wanted us to purchase the entire farm on which the mine was located. This was beyond our need and hence the affair was a closed incident.

"Oddly enough, those boulders were exposed for many, many years, altho the spot was regularly visited by many collectors and students, but apparently, no one thought to use a heavy hammer and some sweat, until 1935, Allen V. Heyl and myself visited the spot, and put in some royal efforts cracking the big 3-4 ton boulder. It paid off with a series of splendid cacoxenite specimens, also streaks of beraunite, and a small amount of wavellite. Most of the wavellite obtained was a coating on a matrix, a fine granular quartzitic and clayey stone. Dr. Heyl often remarked that so many collectors visit these old famous sites, but apparently do no back breaking work cracking the large stones that have seams or cavities and they do pass up a wonderful opportunity to secure some splendid specimens. Even digging in an old refuse bank can supply many valuable and beautiful specimens."

RHODE ISLAND — Brown University in Providence, R. I., has a very nice mineral collection located in its Geology building. One of the interesting minerals on display is a 2 inch loose green xl of beryl which comes from Copper

Mine Hill, Providence Co., R. I.

SOUTH CAROLINA — We are informed by Wm. M. Johnson, RFD 6, Knoxville, Tenn., that the old Schlegel Milch gold mine, near Santee, York Co., S. C., furnished nice calcite specimens. Good specimens of silvery white mica schist came also from this mine.

SOUTH DAKOTA — From Lee Engberg, 615 Quincy St., Rapid City, S.D., we have received some interesting notes, a booklet on the Homestake gold mine, and a very fine gold ore from the Homestake. First let us take up the notes which appear in his letter dated Feb. 10, 1953.

"About four weeks ago we went up to the Homestake mine at Lead (Lawrence Co.), S. D. First we had a talk on the rocks and minerals at Lead. We found out, for example, that there are 6 formations of which the Poor Man and the Homestake are two; it is in the Homestake formation that they find the gold.

"We visited the Yates shaft which is 5,000 feet deep; the only other working shaft is the Ross which is also 5,000 feet deep.

"Then we visited the power house. From there we went to the mill where they have rod and ball mills and also some stamps. They are taking out the stamps and replacing them with rod mills but it will take 5 years. Our next visit was to the cyanide plant where they get the gold that is left over from the mercury in the mills.

"By the way, the Homestake mine and the Bald Hills mine are the only free producing mines in the U. S., that is, they are the only mines producing just gold.

"I am going to send you a booklet on the Homestake and also a piece of gold ore which contains arsenopyrite, cumingtonite, and chlorite; the gold is in minute quantities and can't be seen."

The booklet is a 32-page publication full of interesting information about the famous Homestake gold mine.

The gold specimen, 2 x 3 in size, consists of silvery-white masses of arsenopyrite in a matrix of dark green chlorite and cummingtonite with a vein of smoky quartz.

TENNESSEE — An interesting reddish brown limonite geode, encrusted by tiny smoky quartz grains, and found in a road cut at Camden, Benton Co., Tenn., has been sent in by Roger Maserang, Box 395, RR 1, East Carondelet, Ill.

TEXAS — White to pink barite as small veins in red shales, occurs on the Dora Roberts ranch about 2 miles north of the small community of Otis Chalk in Howard Co., Texas.

UTAH — Another news item has been sent in by Ed Dowse, 329 Reed Ave., Salt Lake City, Utah. It is dated Feb. 16, 1953, and reads:—

"Here is something different — one of Utah's cold water geysers located on the highway between Price and Green River. It blows up every half hour. It starts to make a strange noise before you see any sign of it coming up and then the water starts to boil up from the hole all the time getting higher and higher until all of a sudden it gathers speed and goes all the way up in the air (about 60 feet) then after a short time it begins to recede — all this time it has thrown out a great quantity of water filling a fair size pool, part of this water draining into a wash which flows for some distance.

"As it recedes, the stream of water gets lower and lower until you cannot see the water boiling out of the hole and then what water is left in the pool, drains back into the hole from where it came.

"After the water all drains back, and you did not get to see as much as you wanted, just be patient — it will happen all over again.

"This geyser is called the Roadside Geyser and is owned by some people who have a stand where they sell hot

dogs and soft drinks and charge 25c to see the geyser.

"Down the Green River about 5 miles is another geyser, much bigger and higher as it erupts for about 100 feet into the air, about once every hour. This geyser is located right on the bank of the Green River and as it erupts the water runs into the river. The water in this geyser comes up much faster than at the Roadside Geyser and with very little warning — it happens almost before you know it.

"The Green River Geyser was caused by the drilling for an oil well. I don't know how deep it is but you can see the pipe still in the ground.

"This item has nothing to do with rocks but most rockhounds go out of their way to see something different and both of these geysers are in a very good rock hunting country where agates, petrified wood and dinosaur bones (petrified) abound."

VERMONT — Another find of interesting minerals have been found on his farm by Geo. W. Lowe, Randolph (Orange Co.), Vt. The minerals are purplish apatite xls, purplish fluorite and dark gray cleavable galena, all in a dark greenish-gray calcareous rock.

"The minerals were all found on my farm, several locations. I have since found some better specimens and this summer will try for some bigger apatite xls." — card from Mr. Lowe, dated March 13, 1953.

VIRGINIA — Emery, as a small deposit, is known to occur near Whittles, Pittsylvania Co., Va.

WASHINGTON — Beryl xls, up to 6 inches in length and associated with columbite and muscovite, occur in pegmatite on Calispell Peak, Stevens Co., Wash.

WEST VIRGINIA — An interesting specimen of conglomerate has been re-

ceived from F. W. James, 923-32nd St., Parkersburg, W. Va. It is a dark gray conglomerate made up of dark gray, also brown, pebbles of limestone and smoky quartz. Tiny amounts of red hematite also present in the conglomerate whose locality is Wood County (10 miles east of Parkersburg), W. Va.

WISCONSIN — A suite of three specimens of the interesting zebra stone from near Alma Center, Jackson Co., Wisc., have been donated by L. P. Jerrard, 522 Willow Road, Winnetka, Ill. This stone was described by F. L. Fleener in the Jan-Feb. 1953, R & M., p.39, as "a phase of the St. Peter sandstone in which ground water has concentrated iron oxide in irregular bands much resembling the stripes of the zebra in their arrangement. It surely makes a striking curiosity." Each of the 3 specimens have a different design — the bandings being white, dark and light brown.

In his letter dated Feb. 14, 1953, Mr. Jerrard writes:—

"I am sending you under separate cover samples of the sandstone from Alma Center, Wisconsin, which I cut out of some chunks that I have out in my back yard. The stone soon discolors so that the pattern cannot be seen. It is also soft and erodes away — especially the white color — leaving the dark color in relief. Perhaps the freshly cut or broken surface could be painted with some transparent coating which would preserve the color for use outdoors in gardens.

"There is much variety in the pattern as you can see. Most of it could be called zebra but there is leopard, too, and some other design. I couldn't find a good leopard piece without breaking up a lot of stone. It is a very curious formation."

Another letter, dated March 18, 1953, comes from Mr. Jerrard. In it he says:—

"I first saw the sandstone from Alma Center, Wisc., many years ago in a road house west of Madison, Wisc. The proprietor had built some garden seats of it and also a fireplace in his tavern. He had

bought the deposit and had some idea of commercial production but I think nothing came of it.

"In 1934 I located the deposit which was being worked on a very small scale and got a hundred pounds or more which I put in my rock garden. It rapidly discolored so that now I can only tell what is inside by breaking off a piece with a hammer.

"I will be in Madison within the next two months and will visit that tavern and perhaps learn what the status is of the deposit at the present time. Will let you know what I find out.

"At that time it was called tiger stone."

WYOMING — Nice specimens of bornite have been found in the copper mines of the Encampment district, Carbon Co., Wyo.

ALASKA—A nice sample of grayish-green asbestos (serpentine) has been received from William Freiter, Gen. Del., Anchorage, Alaska. In his letter, dated Feb. 26, 1953, Mr. Freiter writes:

"I am sending you a specimen of serpentine asbestos. It comes from Cape Newenham in the Bristol Bay, Alaska. A friend of mine, who used to work there, gave it to me."

ANGOLA—A large deposit of magnetite occurs at MBassa near the Lucala River in western Angola, West Africa.

ARABIA—The Saudi Arabia government has a gold mine in operation near Muwaih, Saudi Arabia.

CANADA—A beautiful specimen of lustrous lead-gray molybdenite plates with dark greenish hornblende on flesh colored orthoclase has been donated by John W. Edwards, 305 Avenue Road, Toronto 5, Ont., Canada. The locality for the specimen is Wabigoon in NW. Ontario, Canada.

ENGLAND — Not long ago we received some sand samples from Sandy Ramsay, 1015 Aikenhead Road, King's

Park, Glasgow S4, Scotland. Among the sands was a small sample of a dark brown earthy mineral called pigotite. In Sandy's letter, dated Dec. 26, 1952, he writes:

"I also put in the box a little sample that is not technically sand, but is pigotite from Cripp's Cave, Treem, Cornwall, England. I think it is a one locality mineral and Cripp's Cave is a hard place to get to. The pigotite grows on the roof and the crystals glisten in the light of the torch, but when gathered it loses its water of crystallization and becomes a rippled brownish mass — the centre floor of the cave is covered with the powdered pigotite."

FRANCE—There is a large iron mine in France that is located under the sea (in the wide gulf of St. Malo, off the N. coast of France). This undersea iron mine is at Dielette, Manche Department, France.

In U. S. Bureau of Mines, *Mineral Trades Notes* (Washington, D. C.), for February 1953 (p. 8) we learn that the ore is a magnetite—oligistite analyzing 54% iron.

The ore lies in almost vertical strata running parallel to the coast-line and mining is by shrinkage stoping. The mine shaft is about 150 meters (492 feet) deep. From the bottom of the shaft a horizontal tunnel runs seaward and branch tunnels shoot off at right angles along the ore strata.

Owing to its position under the sea, the mine takes in a tremendous amount of water that must be pumped out.

GREECE—We have received several thin dark gray blades of obsidian that had been collected at Rafina (Attica), Greece, by John J. Lavranos when he formerly resided in Athens, Greece. Mr. Lavranos now resides in South Africa (P. O. Box 5104, Johannesburg).

MEXICO—Zimapan is a little town in the mountains of eastern Mexico. From some old mines near Zimapan we have received some nice lead-gray xline

galena and brassy-yellow xled pyrite (cubes are striated). These specimens were donated by Edward M. Graf, P. O. Box 1432, Paterson, N. J.

A letter, dated Jan. 1, 1953, from Mr. Graf tells us:

"These minerals come from the mines near Zimapan, Mexico, where some of the oldest mines were worked by the Spanish in early days. They get silver, lead and zinc from these mines and I also visited the place where they float off the different minerals.

"The mines were about 10 miles from our hotel Fundicion in Zimapan. This hotel is built on the site of one of the oldest mines of early Spanish days. Across the street where they now have a bar and game rooms, the building contains the rooms of the old smelter in which they had tools, bars of metal, etc. and the old chemist's shop. In back of this building are large piles of slag from the old furnace and they are leaving them there as a sort of reminder of the past.

"Took a ride of about ten minutes from the hotel to a place where they grind the ore and separate it by the floatation method. I got a bottle of what they said was zinc, did not check it, they also get lead and silver from here.

"The ride to the mines was a very hectic experience. After about five miles we came to the top of a road, dirt, and the Mexican I had along to show the way said to put the car in first. This seemed a puzzle at first but a few moments later we could see why. We were on top of a hill and the road started to go down at a grade of more than 40% and we went down for two miles; came to a little flat and then again to the top of a hill and looking down there did not seem to be any bottom. This last part of over two miles was along the edge of the mountain, room for just one car, very winding and just space when you looked out of the car. As they run large trucks along this road I wondered what you would do if one should come down when you are going up. We

finally came to the end of this road where a number of holes ran into the mountain from which they were bringing out the ore. From here you could still look down over a thousand feet where they were mining all along the side of the mountain and at this time the ore is brought across the valley by cable car. They were building the road to the bottom of this valley but I would never drive that road again.

"There are many mines in this area. About ten miles from the hotel is a place highly magnetic, this no doubt is a magnetic iron ore. I did not go there although this was known to the Spanish from early times."

SCOTLAND—Scotland is famous for its prehnites and a mention of them to Sandy Ramsay, 1015 Aikenhead Road, King's Park, Glasgow S4, Scotland, brought the following reply:

"Prehnite!!! The finest I ever saw came from Kilmalcolm, Renfrewshire, it is no longer obtainable, and was only to be had for a short time in 1948 and 1949. When I went down to inquire about it, the foreman said 'Yon glassy stuff, there has been none for years and subsequent conversation with an older employee confirmed this.

"I have only heard of one collector who got any, or bothered to collect any. The quarry is off the beaten track. I had no car, and had to take a taxi, the distance being almost 3 miles from Kilmalcolm and back. I was told that prehnite was found in lumps nearly 3 feet long up to 4 inches thick and the "grapes" were over 2 inches in diameter. It was of a greenish-yellow color with specks of what might be native coppers on the surfaces."

Finest Mineral Magazine!

Editor R & M:

I can earnestly say that your publication is the finest mineral magazine I have ever seen. Because of it, I have been able to add about 35 new specimens to my collection. I believe that your mineral trading section is a wonderful medium for making new friends across the nation. The mineral write-ups that appear in R & M are very informative. Even though I am not a sand collector, I enjoy reading about the different sand occurrences in the United States and other countries. In the "mineral occurrences" section, one can read about minerals in our country as well as others. Once in a while it is possible to contact these contributors and make a mineral trade.

As you can see, I think very highly of R & M and I will continue to subscribe for it.

Gordon ViGario
2231 Pine St.
Bakersfield, Calif.

Mar. 30, 1953

ROCK FEVER

(With apologies to John Masfield)

I must go up to the dumps again, to the lonely dumps and the sky,
And all I ask is a giant rock, and a chisel to split it by
And the hammer's clang and the rockhounds' song and the thrill of the hard rock
breaking,
And the bright crystals on the dull rock's face, and all the rockhounds taking

I must go up to the dumps again, for the lure of the waiting stone,
Preys on my soul with a burning urge for a crystal to call my own
And all I ask is a sunny day, with no hint of rain or snow,
And a bountiful quarry located near, to which I may always go

I must go up to the dumps again, to a carefree rockhound's life
To the quiet way, the rockhound's way, where exists no sound of strife
All I ask is a good fair trade with a friendly fellow-collector,
And to get out before comes in a patrolling mine-inspector.

by B. French and A. C. Kaye-Martin

MINERAL SHOPPER'S GUIDE

Conducted by **CHARLES A. THOMAS**

706 Church Street, Royersford, Pa.

Advertisers are invited to send notes or samples of their products. This service is free.

As we grow older with our hobby, we like to mull over certain aspects and side views of collecting. We have tried to compare the collecting of minerals with other hobbies and always come up with reasons why the gathering of mineral specimens and such things that go with it, is so much better than practically any other type of activity. To begin with, there are so many different minerals. Also, there are a great many types of one variety. A collection of all calcite, if very good and sufficiently rare and beautiful, can occupy a home museum. There is the magic word, MUSEUM.

There are a few collectors who are off the beaten track, but who, being brave and loyal to their hobby of mineral collecting, keep a building without benefit of encouragement from other collectors excepting by mail. We wish we could visit these collectors who rarely see another collector in the field or in their home as visitors.

We are leading up to something as usual. Firstly; the greatest helper-outer for the isolated collector is **ROCKS AND MINERALS MAGAZINE**. For many years, its editor, Mr. Peter Zodac, has been a life-buoy to many collectors, yet there are many collectors who just have not yet got around to subscribing. This we cannot understand. We have tried to picture what it would be like NOT to have **ROCKS AND MINERALS** come to us regularly. It makes a gloomy picture, indeed. Mr. Zodac has given much valuable space in the magazine to activities of the mineral societies, yet only a certain percentage of the membership do subscribe. There are many, it's true, but there could be and most certainly should be more than triple the number of subscribers from societies alone.

Secondly; the dealers and exchangers who advertise in **ROCKS AND MINERALS** are primarily interested in minerals and

to a certain extent, they are interested in the collector. There are more than just a few dealers who ARE dealers because they love minerals and want the personal contact, either live or by mail. Why are they dealers, instead of exchangers? The one big reason is due to the fact that many of their specimens offered for sale are much too far above the average in value to take a chance on an average exchange. Money? Yes, sure. We all know that money is the basic medium of exchange the world over. So dealers would rather exchange a very good specimen for something they know will be more satisfactory both ways. It is so easy, too, to effect this type of exchange. One just sits down, selects specimens from the advertisements or catalogs, sends a check or money order with his selection from the lists and in a few days receives the material from the dealer. Most dealers send on approval or urge you to return what is not wanted or what is not satisfactory. Few specimens are sent back. Dealers are a boon to those who are isolated. They have many friends and are writing letters continually to new friends and old and if you doubt this, ask 'em.

It does not cost a pile of money to obtain very excellent specimens. A home-grown display cabinet in which there are dozens or hundreds of mine dump or quarry specimens just might be very good. It would be a thousand times better if a fair sprinkling of colorful or very good crystallizations were represented. It is next to impossible to have a really good collection without buying an occasional dresser-upper.

We know a great many collectors and have seen their displays. Some few make it a point to buy at least one good specimen per month to add to their growing collection. If you are an apartment dweller, the most practical way to display mineral specimens is to have a chest of

shallow drawers and make use of thumb-nail sized specimens, or better still, go in for micromounts. Fluorescent specimens may also be thumbnail or micro. . . of which more later. Exquisitely fashioned redwood frame and glass trays may be obtained from the J. L. Sumner Co. of Phoenix, Arizona, whose ads have appeared in these pages—pictured in the January-February issue. Very nice, indeed.

Rough or finished gem stones also make fine collections and take up so little space. A hundred polished slabs may be placed in one cigar-box. One N. J. man has over a thousand polished slabs in one drawer—a most excellent mineral collection and quite a few of them are rare Franklin, N. J., specimens.

Either gems bought ready formed and polished or of your own handwork are a source of much satisfaction. It has been suggested many times that a gem display should have a piece of rough gem alongside of the finished gem. . . and it certainly is a most interesting method of displaying gems. Therefore, we urge that two rough or one rough and one finished gem stone be obtained with this idea in mind. There are many dealers who can supply both. Coast Gems and Minerals, J. C. Filer and Son, North West Gem Shop, Plummer's, Southern Gem and Mineral Company, Wrightway Gemcrafters, Technicraft, Nevada Turquoise Mines Elliott Gem and Mineral Shop and many many others carry both the rough and finished gems in stock. The New England Diamond Corp. claims, "You name it—we've got it". Some dealers sell only rough, such as The Bradleys, Ernest Meier for cut gems and Beissinger for imported cabochons and cut stones. There are others, please look them up in these pages. It costs no more to have a really grand gem collection than it does to build up a cabinet specimen display. How 'bout it?

There is hardly ever a fine collection of minerals seen anywhere which does not have one or more of some type of geode in a prominent position. Iowa has been long famous for geodes of great interest. The sparkling crystallized interiors

are very beautiful. The Smiths, of New London, Iowa, have seen fit to name their business, The Smiths-Geode Industries. Geodes, bookends and ashtrays of geodes are offered at very reasonable prices. While we are on the subject, we wish to state how difficult it is to come by a good amethyst geode. Reginald C. Miller, 50 West 29th St., N. Y. City 1, N. Y., offers fine colored amethyst under the heading, "Geodes from Uruguay".

Did you know that the Chinese love to work up amethyst? Oriental lapidaries make fine jewelry from the paler colored lavender quartz in which the stones are polished in nice rounded cabochons. Pale serpentines and soapstones are also carved into highly polished figurines.

Frank Waskey, who is often mentioned in this department, sent us another batch of Arctic curios (artifacts). The "hard-ware" used on ancient and some modern Eskimo kayaks were made from ends of walrus tusks and bones, expertly carved to fit the need of the well-built kayaks. Three such pieces, a lip-plug and a sharp sliver of jade from an axehead, were sent us. We cut and polished a cabochon from half of the lip-plug which turned out beautifully, and sent it to Frank. Hope he likes it.

Incidentally, ivory from walrus tusk is nicely fluorescent under long wave lamps. The EH4 causes a reaction in a rather brilliant blue green white. Artifacts stained by soil in the middens of ancient Eskimo camps will fluoresce if cut and polished and will show a pleasing pattern due to the earth stain which seems to enter certain areas of the ivory and not others. Slabs of mammoth tusks are fluorescent in a bright bluish white. Some time ago we had the opportunity of a lifetime in being able to fluoresce many odd types of bone and ivory from the Arctic. A Narwhal tusk, beautifully twisted, fluoresced pale yellowish white.

Frank Matan sent us some nice slabs from rocks picked up during his summer vacation in Upper Michigan. Some of the slabs appear to be jaspers, one of which looks similar to western rose or garden jasper. The prettiest slabs were

those containing exposed nuggets of copper in prehnite, calcite and serpentine. One very nice slab of hematite contained larger masses of native copper. Lucky finds, Frank, and we hope you can find more this coming summer. Frank lives in Gary, Indiana.

Another parcel just came in from Mrs. C. Roder, of Hot Springs, Arkansas. In this package were a dozen or so small samples of a nice banded silicate somewhat resembling the texture of Flint Ridge, Ohio, material though the pretty pattern is formed by light and dark bands of brown and grey. The material takes a most brilliant agate-like polish. Mrs. Roder may soon present this material to readers of **ROCKS AND MINERALS MAGAZINE**.

1953 Catalogs are coming, still, from the larger lapidary supply houses. One notable and rather complete catalog was received from the Allen Company, whose products are handled by **ROCKS AND MINERALS** advertisers.

John S. Albanese sent us a package containing approximately thirty thumbnail size Franklin, N. J., specimens from which we gleaned quite a few very good micromount possibilities. Those which contained no micro crystals are very definitely destined to be used for mounting on small plastic or glass stands. Mr. Albanese has, for sale, nearly all of the rarer and most beautiful Franklin specimens in all sizes. One very unusually excellent crystal of margarosanite was among such choice items as hancockite with axinite (micro), aggregates of axinite with some interesting cavities containing ideal axinite and hancockite crystals, rhodonite with willemite and franklinite, calamine from Sterling Hill (Ogdensburg), friedelite, polyadelphite garnet crystals, magnetite, hodgkinsonite, crocidolite, asbestos, amazonite with garnet, mcgovernite, native copper in greenish white carbonate, norbergite crystals, fluorite, calcozincite, sussexite, caswellite, corundum (ruby) and many other showy thumbnails which simply must be mounted. Approximately six or seven of the types, presented suitable and lovely

micromount crystals.

In studying small, clean Franklin specimens for possible micros it seems to be a good idea to work with a short wave lamp in a darkroom. Hidden and unsuspected willemites are often associated with other types. Whether or not one finds perfect crystals while examining Franklin material with a 'scope and a short wave lamp, is secondary. Very interesting spots in a wide variety of colors such as orange, which may be clinohedrite, blue, lavender, dark purple, yellow, green, pink and red, pale buff, brilliant orange-yellow suggesting wollastonite, and a host of other hues may be seen in one small thumbnail specimen. Other bright fluorescents such as curtisite and sphalerite give a good show with the long wave lamp. Nearly all dealers sell thumbnail size specimens at very reasonable prices. Fluorescence microscopy is gaining by leaps and bounds. Interesting?

We have touched on Arctic rocks and curios several times. Mr. M. L. Peterson, who has advertised steadily in these pages offers rocks from far away Antarctic lands, a world away from the frozen North.

When this department was started, we made a rule with ourselves to be as honest and as helpful as possible. To be honest about mineral specimens it is necessary to see them (as small samples). This rule has been broken several times due to the fact that we knew exactly what the dealer was offering, having seen the material in collectors displays and recognizing the exact locality material being offered. We realize that bulky and expensive items cannot be sent to this department for appraisal and had suggested that a picture be sent us. Garden State Minerals sent us a nice photograph of their new long wave lamp. It is a very neat and efficient looking lamp and we are impressed, not only with the photo, but also with the bargain price of \$18.50. We urge students and advanced collectors to add this lamp to their equipment if they have not already obtained a balast type long wave lamp. Balast type long wave lamps will react minerals which

the Purple X bulb will not touch. Each lamp has its use. Temple aragonite as sold by the Midwest Shop in Chicago is an example of specimen which reacts so well with the Purple X. Try them both. Garden State for balast type long wave lamp and long wave minerals and the Midwest Shop for the purple X long wave and long wave minerals.

Bob Barnes, of Kentucky, sent us two very nice specimens of cave aragonite which react well with the long wave lamp. We have been trying to contact sources of white fibrous aragonite which might compare with the Pennsylvania material in brilliance of long wave fluorescence. At this writing, there is about forty feet of water in the Temple, Pa., aragonite locality with little hope of ever getting more of this long wave fluorescent material out in the near future. . . and we are not hoping for a serious dry spell—the only condition which will permit collecting of this material.

Our ears snapped up straight and rigid when we heard a T.V. (in the script) mention that Wally Cox, our favorite T.V. scientist comedian, used to swap rocks with the boys in his town. Wonder if he really ever did? How 'bout it Wally? We also note the blunders on T.V. Dorothy Kilgallen stated that her son received an ultra violet lamp from a friend and that it caused such minerals as tin, copper and other "minerals" to change color in the dark. Well, Dorothy, you are our favorite panel "brain" so we shall have to forgive this one.

Speaking of T.V., did you know that lepidolite is crushed to a fine powder and used to make the large tubes through which one might better see the picture? This is one of the great day by day tasks performed by the Foote Mineral Company's plant at Exton, Pa. Spodumene, another source of lithium is also crushed in huge grinders. The well informed will remember that the Foote Company started as a mineral specimen sales firm, but is now a multimillion dollar commercial mineral supplier. Anyone need a couple of tons of crushed Australian zircon?

Once in a while we like to mention some mineral specimens which seem to be among the missing in many collections. One of them is garnierite, an amorphous silicate of nickel. It is apple green in color, soft and not too brilliant in luster. However, it is found in only two or three localities in the United States, Southern Oregon, North Carolina and possibly in very minute showings elsewhere. Green minerals, aside from coppers, are just not too plentiful. Uvarovite, some pyromorphite, prehnite, vesuvianite, some jade and a few others may be found in the green lists. Coppers, of course, help fill the rest of the lists. The green of nickel ore is sometimes very beautiful and garnierite is an ore worthy of its place in the display cabinet. On one of our personal visits to a nickel mine in Pennsylvania, we could find nothing of interest excepting leaching products coating rock, but of sufficient lovely green showings, so we gathered some and brought them home. We were happier with this apple green coating than with the 1905 nickel we found which, no doubt, was dropped by a miner on pay-day. Nickels from a nickel mine already minted! If the reader is interested, he may obtain a good specimen of this nickel ore from Minerals Unlimited, whose address may be noted in their recent ads—in ROCKS AND MINERALS MAGAZINE.

The University of Colorado Experiment Station is assembling a collection of all known radioactive minerals. There is a long road to travel until all, or nearly all, of the rare ones are displayed in this single collection. We appeal for help in this worthy attempt and ask readers who might have rare duplicates, to contact F. A. Rohrman, room 127, Ketchum, of the Engineering Station, Boulder, Colorado, (University of Colorado), who is prepared to pay for such items as: Aldanite, Bassetite, Calciosamaraskite, Davidite, Erdmannite, Fluocerite, Huttonite, Ianthinite, Johannite, Kararfveite, Lessingite, Maitlandite, Nasuyite, Oyamalite, Parsonite, Rinkite, Studdite, Tanteuxenite, Uranospinite, Voglite, Weinschenkite, Yttrogum-

mite and Zirkelite, to name only a few. We beg readers who may have duplicates to contact F. A. Rohrman as soon as possible. There are at least 134 rare

ones listed which will be needed. Such items as Autunite, Gummite, Uraninite, Thorite and the better known specimens are already in the collection.

"HARD HEADS"

By FRED DUSTIN

On pages 136-7 of the March-April 1953 number of *ROCKS AND MINERALS*, Mr. I. O. Fitzgerald tells of certain stony formations taken from the heads of "Virginia croakers," (*Micropogon undulatus*) known in Virginia as "Hard Heads."

In a recent publication, "North American Fresh Water Sport Fish," the author states that the fresh water drum has been endowed with at least nine other names, among them, croaker, thunder-pumper and sheepshead, and it is by the last name that in the Great Lakes region it is well-known. In early days they were very numerous in the Saginaw River, and in at least one of its tributaries, the Shiawassee River, but now it seems to be unknown in both of these streams, although it is still plentiful in the Great Lakes except Superior. My own interest in this fish has not been either of a biological or sporting nature, but as an amateur archaeologist and field collector of Indian artifacts, ceremonials, pipes and many other prehistoric remains, I have collected scores of these Virginia "hard heads", here called "lucky stones," and nearly all were picked up on certain prehistoric Indian village sites at or near where the Tittabawsee and Shiawassee Rivers unite to form the Saginaw. They vary in size as Mr. Zodac notes, but many of them are about an inch in diameter, and the figure on them is a deformed capital L, which has given them the name of "lucky stone".

I have been informed that in the South where they are plentiful in all of the States except Louisiana and Texas, they are regarded as "lucky stones" by the negroes, and by them believed to be valuable for their supposed quality of

bringing good fortune to their possessors. It is also true that certain whites in the Great Lakes region, regard them with considerable respect for the same reasons.

The Indians did not collect them except as they "collected" their owners, the fishes who possessed them as parts of their anatomy. The sheepshead was a favorite with the Indians, being very plentiful and easily caught. I have never found these interesting relics in groups, but always singly, just as they were discarded and cast aside by those who devoured the fish.

The scientists mention these lucky-stones as "the ear-bones of the sheepshead fish," and Mr. Zodac gives their chemical composition as calcium carbonate.

I have found many in distinctly acid soil, some of them where everything indicated great age, very possibly from three hundred to perhaps six hundred years, but they do not seem to have been effected to any extent by outward conditions, while heavy mussel shells were mostly dissolved under similar conditions. It may be that some other chemical element forms a very small part of their composition, which has a resistance to acid, and is an interesting question.

We Dare Not Cancel Subscription!

Editor R & M:

Don't you dare cancel my subscription! Enclosed are \$6.00 for a 2 year renewal.

Charles H. Innis
166 Pearl St.
Jackson, Ohio

April 15, 1953

THE MICRO-MOUNTER

Conducted by LEO NEAL YEDLIN — 129 Englewood Drive, New Haven, Conn.

During the past few months, while the Micro-mounter was busy cleaning up the collection, relabeling, discarding, remounting and all the many never-ending details that go into the creation of a collection worth its name, a lot of data accumulated, some of which is worth presenting for your attention.

From Harry Ross in New York City news of slides put out by him of minerals, plants, foraminifera etc., of fine quality, to sell at about 25 cents each. Also domestic and foreign microscopes beginning at about 12 dollars. Not toys, either. From Irving Banner, of Eimer and Amend, N. Y. C., a trick of mounting. Go to the dime store and get those cards of thumbtacks. Mount your specimens on the tacks—four dozen to a card, and the whole can be filed in any sort of box with side brackets. From Harry Takvorian, of New York City, the jeweler's trick of putting a box or catch-all under your work to keep from losing dropped fragments. Since we often mount specimens while peering at them through the "mike," and since they frequently become jarred loose, we've found that a regular mineral tray of paper, or cigarette box, attached to the stage of the instrument with a rubber band, has saved many a tiny loose crystal. From Willet R. Willis, of Colorado Springs, Colorado, some wonderful specimens, including beautiful bright silver xls, mounted in plastic, from Mexico. These are from the flue linings of the smelters there and are sold as novelties to the tourists. They make superb m/ms.

Willis has done stereo photographs of some of his mounts, and has sent me a dozen of them. They are excellent. Here is what he has to say:

"The last issue of *ROCKS AND MINERALS* (September-October 1952) seems to invite comment along the line of stereoscopic photo-micrography, and by

way of a Christmas card I send you the result of my long-time efforts in this direction.

"I have found that the same effect reported by Mr. C. A. Hartshorn can be achieved not only by photographing a crystal twice, through each barrel of a stereo-binocular 'scope, or through a monocular 'scope by moving the specimen laterally 1 mm, but also by rotating a crystal on the stage of the monocular "mike" a few degrees between shots. Very satisfactory results are obtained if one has plenty of time and patience."

A later letter from Willis gives additional information:

"I am sending you a few more stereo photographs of micro-mounts. I prefer to take them through the same barrel of the microscope with the rotation between shots. A ten degree turn seems about right. Fifteen is too much. The specimen remains always directly under the objective and the amount of movement between exposures can always be controlled."

We are lucky. Last fall, smashing up some of the platy albite (cleavelandite) from the Strickland Quarry at Portland, Conn., (Yes, it has reopened, as a working for beryl.) we found something hitherto only seen by us under 48 X magnification. Yep, basal termination on quartz, visible to the naked eye! A tiny dull six-sided face, intersecting the negative and positive rhombohedrons. Searched through all the remaining stuff we had. No luck. But we're going back shortly to see if there's more.

Robert Lobel (105 Hillside Blvd., Daly City, California) announces the formation of the San Francisco Micro-Mount Society. From the reports drifting back this way the new club is a honey. For you westerners who've been asking about such an organization, a note to Lobel will bring information. Glad to have you

aboard.

Want a good deal? Want to get superb m/m specimens at a cost that is a definite loss to the people selling them? Want to meet some swell folks by mail (or in person) who take the trouble to select, pack and ship stuff for which they receive no adequate compensation except that of knowing that a lover of minerals will be satisfied? Then write to the BURNHAMS, of 128 S. Encinitas Ave., Monrovia, California. We wrote to them, not expecting too much. In due course we got an answer, and a box of m/m specimens. Read what George Burnham has to say:

"Dear Mr. Yedlin:

It seems a shame to charge for such small pieces, but frankly, it took me 3 hours to get them together. We have about 400 pounds of massive olivenite with xl vugs in it, but it took me a couple of hours to find some that showed good possibilities for m/m specimens. Always something wrong with the ones easiest to get out. . . ."

This is what we got: Hydromagnesite; jarosite; brewsterite; willemite (Belgium); braunite; pucherite; polybasite xls in quartz; pyrrargyrite, vanadinite; argentite on pyrite; thomsonite; and olivenite (Tsumeb). Know what the lot cost? Two dollars and ten cents!!! Sure we're amazed. And the stuff was tops.

Our last column included some notes about the publication issued by the Baltimore Mineral Society, "The Pegmatite." Vol 2. No. 3 has an article by Desautels entitled "Notes on Minerals from Laurium, Greece." This is a *must*. It's a review of the essential information to date on the minerals of this famous locality. It wouldn't be quite accurate to say that the article makes identification an easy and sure thing, but it sure makes determination within the realm of the advanced amateur. You don't have to go by the labels on your acquired m/ms. You can figure them out for yourself.

From a letter of Paul Desautels: (What would this column do without him?)

"That vesuvianite material (Black

Lake District, Quebec.) has supplied me with the best mounts I've made this fall. One is a single xl mounted so that all its terminations show. It's a picture right from a book. Another is a sharp emerald green transparent diopside xl in a white matrix. It is doubly terminated. The third is an odd but beautiful mount of colorless transparent chlorite xls. It's the transparency, brilliance and habit of the xls that makes them so good. They are tapered, prismatic with a hexagonal cross section and are all delicately scattered on a darker background. I had to work about 10 pounds of material to get these but it was worth it. Switzer (Dr. George Switzer, U. S. National Museum) says there are thousands of tons at the locality. How about a trip?"

We will end this column with a tragic note. A letter from Prof. Leland C. Wyman of Boston College tells of his travels last year. In it appears this statement: "One evening I drove through Lavrion (Laurium) Greece and saw the mine entrances and old dumps but didn't even stop. . . ."

O Tempora, O Mores.

OUR ROCKS AND MINERALS!

Editor R&M:

Am enclosing another new subscription for our ROCKS AND MINERALS. You will note that I said *our* for I feel more interest than just as a mere subscriber. Don't you think that the average collector feels the same? One man alone cannot make an interesting publication; he needs the cooperation of every reader. I am only sorry that I can do no more than an occasional report on Ohio locations or a new subscription now and then.

C. O. Gettings,
2001 Starr Ave.,
Toledo 5, Ohio.

April 25, 1953.

A Progressive Magazine!

Editor R&M:

I would at this time like to tell you just how much I like the new and up to date *Rocks and Minerals*. The seemingly increased amount of pictures directly dealing with minerals and their localities rather than the people who collected them in my opinion has made R&M even more appealing. Of course I should not neglect the new type of cover which definitely *should* accompany such a progressive magazine.

Sam Speck
Louisville, Ohio

April 16, 1953.

IGNACY DOMEYKO

FAMOUS SOUTH AMERICAN MINERALOGIST AND GEOLOGIST

(On 150th Anniversary of His Birth)

By TOMASZ J. TURLEY

Chicago, Illinois

One hundred and fifty years have gone by since the birth of Ignacy Domeyko (1802-1889), famous scientist in the field of geology and mineralogy of South America, especially of the Republic of Chile.

Almost half of his life I. Domeyko dedicated to research in the domain of geological structure and mineral resources of Chile, Bolivia, Peru and Argentina. Because of his great contribution to the foundation of the mining industry in Chile he is sometimes called the father of mining engineering in Chile."

Ignacy Domeyko was born in 1802 in Poland, where he studied the natural history sciences at the University in Wilno. I. Domeyko was the best friend of Adam Mickiewicz, famous Polish poet and professor at the Sorbonne, Paris. After the Polish Revolution 1831 emigrated to France, where he continued his education, by 1838 I. Domeyko graduated as a mining engineer. In the same year the young and capable engineer and chemist received an offer to lecture in physics and chemistry at the mining school in Coquimbo, Chile. Later he was appointed professor in geology and mineralogy, and finally he became president of the University of Santiago in Chile. After almost half a century of work, I. Domeyko died at Santiago in 1889 at the age of 87.

The long years of his work in Chile are responsible for the development and progress of science and mining engineering in this country. Domeyko reorganized the university, conducted research on mineral resources, discovered some new minerals, and prepared textbooks on geology and mineralogy for students of the university.* It is known that Ignacy Domeyko tried to help improve the living conditions of Indians inhabiting one of Chile's provinces—Araucano.

Professor Domeyko's greatest contribution in the field of scientific work was



I. Domeyko.

mineralogical and geological research in Chile and included publication of many scientific papers. These contributions appeared in the *Annales d'école de mines, Paris, Reports of the University of Santiago, Neues Jahrbuch für Mineralogie*, and in textbooks.

To this day Domeyko's "Mineralogia" is fundamental to anyone taking up a study of the minerals of South America.

In the recently published book by Dr. M. Hey, 'Index of Mineralogical Species,' London, 1950, we find ten names of minerals, discovered by I. Domeyko in South America. For the most part, these minerals belong to the ores containing Ag, Hg, Cu, Bi, Sb, As, etc.**

One of the minerals occurring in Chile and Mexico was named by W. Haidinger in 1845, "Domeykite" — 16 (Cu₃As)—

*I. Domeyko. *Mineralogia*, 3rd edition que comprende principalmente los especies minerales de Chile, Bolivia, Peru and provincias Argentinas con appendica Santiago de Chili, 1884.

I. Domeyko. *Jeolojiapor Ignacio Domeyko*, 1903, Santiago.

I. Domeyko. *Ensayo sobre los depositos metaliferos de Chile*, 1876.

**Minerals named and described by I. Domeyko: Bolivite, Castillite, Bordosite, Arkerite, Ammiolite, Phillipite, Taltaite, Taznite, Tocornite, Daubreite.

and two other minerals are named: Argentodomeykite (CuAg)₃As, and Stibio-domeykite ($\text{Cu}_3(\text{AsSe})$). One fossil mollusc was named by Alcides d'Orbigny—*Nautilus Domeykus*.

A beautiful specimen of domeykite from Houghton, Mich., may be seen on exposition in Hall 35 of Chicago Natural History Museum.

To this day the Republic of Chile honors the memory of Domeyko as the

famous South American Mineralogist he was. In recognition of his great contributions in the field of geology and in research on natural resources of Chile, following the death of I. Domeyko, the government of Chile named one of the mountain ranges of the Andean Cordillera "Mount Domeyko." They also erected a monument to him on the campus of the University of Santiago in Chile's capitol.

TRIP TO SWIFT RIVER, MAINE

By JOHN R. DILLINGHAM

Naples, Maine

Early one morning in August, 1952, we arose (my wife, two daughters and myself), packed lunch, tools, etc., provided for the dog and hens and started for Swift River, near Byron, Oxford County, Maine.

The sun arose lazily as we topped Streaked Mt. and retarded our vision, as though to penalize us for arising before he did.

Soon we were at the home of Charlie Marble (over 40 miles from our home) and it was only 7:15. Charlie greeted us warmly as this trip was conceived away back in February. (I am sure that Mr. Marble's name will be recognized by many Rockhounds here in the Northeast, and, if there are those that haven't met him then they are certainly behind in their Maine-ites).

With Charlie aboard we soon were subtracting the miles that lay between us and that powerful lure—Swift River Gold.

As we rolled along the road, Charlie pointed out where old mines and prospect holes were located. One road cut especially intrigued me, as he had faceted a tourmaline that a workman had found there. (That's another must on my to-visit list).

Byron was finally reached, we turned on to the weld road and up the young mountain that guards the East Branch from us lowlanders. As we neared the bottom of the other side, a beautiful view of Mt. Tumbledown hung in the distance. Another side road and then we tumbled out. Tools, packs, lunches were procured and recovered. Now we were gold prospectors as of old—on foot.

At last, after hiking over brush piles, fallen trees and countless rocks, we reached a location on the river where Charlie declared, "This is the place to start panning."

After washing gravel, sand and debris from many pans with nothing to show or excite us,

it looked as tho it was going to be "another of those days."

However hope never entirely died, so with indifference I loaded my pan again, with iron impregnated clay, sand, and glacial till. Settling the pan below the water, I washed out some of the rusty coloring, discarded some of the larger stones, and proceeded to pan off the accumulation. Gradually the mass cleared and got smaller, the gravel and broken rocks passed over the sides of the pan, and now the garnet sand showed thickly. Careful now, the pan must be shaken gently, the garnet sand is passing and the black magnetic sand begins to appear. Hold, wait, and there before my eyes is a small irregular piece of yellow metal!

I asked Charlie, "Is this the McCoy?" and Charlie, busy himself, hardly glanced my way saying, "no—anybody knows gold when he sees it." Then "wait, hold on, that's it, that's it!" and it surely was.

As I looked at that cold yellow metal laying amidst the garnet and magnetic sand, I couldn't help but reflect—"This is the stuff that breeds murders, wars and greed. What fools these mortals be."

After that we got a few more flakes of gold—not enough to make us "gold hoarders" but still sufficient to show off in a small phial.

The trip home was uneventful, and long, and tiresome but the thoughts of being able to produce, when friends ask with a pitiful smile "Where's your gold," is worth what it cost in labor and lost sleep.

Swift River has long been a magnetic, magical sound, thoughts quicken, the mind reverts to the music of falling and splashing waters, where the rift of ledges is upright instead of horizontal, glacial boulders of granite and Jasper and oh yes, something else—gold.

THE AMATEUR LAPIDARY

Conducted by **COMMANDER JOHN SINKANKAS**

Certified Gemologist, American Gem Society.

1107 S. Oakcrest Road, Arlington, Va.

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

A JEWELER TALKS TO A CUTTER

The other day I happened to be in town so I dropped in to see my friend, Mr. Scott, a jeweler of the old school; by old school, I mean a craftsman who creates jewelry starting literally from the raw metal, painstakingly assembling each piece, bit by bit, until the whole is done—an individual handmade masterpiece. We are prone today to confuse the time honored meaning of jeweler with the modern one which has come to signify merely a *jewelry salesman*. There are now very few jewelers in the modern sense who are also jewelers in the old-fashioned sense. Mr. Scott fortunately, is both.

"Mr. Scott" I said, "I know that you've been setting a lot of stones and making a lot of jewelry for many of us amateurs and I'd like to know what you think of the stones that they give you?"

"They're not bad, Mr. Sinkankas, not bad at all but there are a few things that the cutters could do which would help a lot."

I encouraged him to go on.

"Take for example cabs" he said — "I've gotten many cabs which look slick as a whistle on top but boy!—some of the bottoms! Of course I agree that no one's going to see the bottom side of any rock unless you show it to them, but it's mighty rough on me when it comes time to setting them."

Mr. Scott then went on to explain that far too many cabochons come in with bottoms that are not truly flat and even more often, with the edges as sharp as a razor. The first is poor because it is extremely difficult to fit the stone to the bearing inside of the mounting.

"In fact", said Mr. Scott, "I cracked

a fine piece once just because in burnishing the silver bezel, I pressed down on a spot where the stone was raised up from the bearing. To make the bearing fit each irregularity of the bottom would call for so much tailoring of the mounting that the price would go sky high and of course the customer wouldn't come back a second time."

"Sharp edges on cabochons are also very bad," explained Mr. Scott, "because it is almost impossible to keep them from chipping either in putting the stone in the mount or in the later process of burnishing."

He showed me that in pressing the burnishing tool against the silver of the bezel to force it over the stone, all the pressure fell on the very thin knife-like edge of the cabochon. Shucks, he said, even a piece of jade is likely to break!

Now on the other hand, he said, there is the fellow that decides to help out and puts a bezel edge around the bottom of the stone so as to get away from that chipping I'm talking about but too often, he gets carried away with his job and makes it too big and too uneven. That's bad too, because you only want a hair taken off the bottom—no broader a cut than maybe a thirty-second of an inch. If it's too wide, the stone doesn't sit flat side on the bearing and most often gets loose after it's been worn for a while.

He summarized it neatly by saying—If a man wants a good job done on his pet stone, he's got to deliver a good stone to begin with. Most commercial cutters get into a peck of trouble if they try to sell stuff like that—no sirree, they wouldn't last long in this game!

"Now about faceted stones, Mr. Scott,

do you run into trouble on those too?"

"I certainly do", said Mr. Scott, not without indignation. "If there's one thing that I hate in a faceted stone it's a girdle that comes down to a knife edge. Some of them are so sharp that you can shave with them! That sharp edge gives me the same trouble that a sharp edged cab gives, only worse."

"How so?" I asked.

"Well, in a cab a small chip along the bottom is mostly covered up by the silver of the bezel and the stone itself is usually something tough like agate, jade or tiger-eye. A small chip doesn't tend to spread out like in glass or obsidian where it's really bad. Most facet gems though, if they chip along the girdle, have a nasty habit of having the chip go clean up to the second facet or even the table facet. Just as bad on the bottom too.

"And," he continued, "you can't hide them—there they are, big as life!"

"What do you do?" I asked.

"Shucks man, what can you do? I've got to take the stone over to a cutter and have him re-cut the sides and when he gets through, my profit's gone out the window."

"What can the cutter do on that score," I said.

"Here's what he can do," said Mr. Scott, calming himself with a distinct effort. "He can make his stones a wee bit thicker in the girdle but mostly, he can give that girdle just a lick and a promise on the cutting lap and then polish it on

a wood lap."

A faraway look crept into his eyes. "I remember in the old days," he said, "When each stone was nicely rounded along the girdle, almost like a part of a small circle. I could really put some pressure on bending over those prongs and getting a good tight fit with lots of spring so that the customer could wear a ring forever and never shake the stone loose. Now these knife-edge jobs, you handle them with kid gloves—you're got to or it's going to cost money instead of making money. Setting stones with kid gloves is all right but when you're handling big emerald cuts and stuff like that, it takes a little pressure to get those prongs down tight. Like I say, if the cutter gives me something good, he'll get something good in return."

"Well, that's most interesting, Mr. Scott," I said. "Now what about those faceted girdles which a lot of amateurs put on their stones these days?"

"They're O.K." answered Mr. Scott. "Not nearly the trouble that the knife edged jobs are but they still have sharp points on them and do chip once in a while. Can't beat the girdle that's rounded though, no sir!"

"Well, I sure picked up a lot of dope from you Mr. Scott. Thanks a lot and I'll see if I can spread the word around. Bye."

"Bye," said Mr. Scott. "Come around anytime."

A NEW SYNTHETIC GEMSTONE!

In the dry, legal language of the patent attorney a promising new synthetic material is described in Patent Number 2,628,156 — Optically Glass-like Material, filed October 24, 1951, granted February 10, 1953. The opening paragraph states:

"This invention relates to optically glass-like material. More specifically it relates to optically glass-like material which is highly refractive. Furthermore it relates to optical material which possesses very high refractive index with high dis-

persion."

It goes on to state: "Broadly this invention contemplates high refractive glass-like material formed by co-fusing of strontium titanate particles into a monocrystalline mass."

In succeeding paragraphs a description is given of the fusing process which turns out to be essentially identical with the Verneuil process. The melting point of the strontium titanate is given as: "in the neighborhood of 2100°C." Adjustment of the flame and other means give

the possibility that boule size can be made larger or smaller at will. From the context of the patent statement the adding of impurities to obtain colored boules is contemplated. In experimentation, a boule of strontium titanate was formed $\frac{3}{4}$ " long by $\frac{1}{2}$ " thick in $4\frac{1}{2}$ hours. Upon leaving the oven however, the boule was substantially black but by an annealing process lasting 14 hours, and then cooling for 4 more, the boule was caused to become transparent and quite colorless. Annealing took place at a temperature of 700°C in an atmosphere of air.

This is very interesting so far but just what has this material got that we do not already have? Hold on to your hats—it has a refractive index of 2.409 and an extremely large dispersion or if you could see it in a cut gem, splendid 'fire'. The invention contemplates the use of synthetic strontium titanate for lenses, prisms, and other optical purposes but, and this is most important, it also claims the use of this material "—shaped in the form of a gem". This my dear readers, sounds not only like the National Lead Company, the assignees, have now gotten a beautiful new synthetic material which promises to eclipse synthetic rutile but from where

I sit, they also claim the right to cut the material. In other words, it sounds very much like all the cutting as well as the making of the synthetic will remain under their control as long as they desire to keep it that way within the time limit of the patent.

No mention of other optical properties is made in the patent statement but I have been given to understand that strontium titanate is singly refractive. With a dispersion or fire far above flint glasses, a refractive index very close to diamond, and no fuzzing of back facets due to double refraction, this new synthetic gemstone promises to go far indeed. Also not mentioned was the hardness but this is understood to be about the same as synthetic rutile.

Thus by the dignified phraseology of a double sheet of paper, a new gem is due soon to burst upon the markets to the delight of all gem cutters. Naturally with its low hardness it will lack the invincible durability of diamond, but if the price reaches the same reasonable level that synthetic rutile has achieved, it should sell like hot-cakes at a lumberjack's breakfast.

Copies of the patent are available from the United States Patent Office, Washington, D.C. at \$.25 per copy.

AN ENGINEER VIEWS LAPIDARY MACHINERY

Your column in the Jan.-Feb. issue of R & M intimates that the lapidary equipment presently made and sold to hobbyists is something less than perfect. That is a euphemistic statement of the situation with reference to certain items I have purchased or used. As a mechanical engineer who has spent forty years using, designing, building, and observing the operation of machine tools and mechanical devices I can say that there is no comparison in smoothness of operation, quietness, and rigidity between a tool grinder or disc saw as used in a machine shop and the similar grinding and polishing arbors and diamond saws offered by some companies. Granted, the latter are built to sell at a moderate price, for lighter work and fewer hours of service. However there is a point beyond which skimping and shaving in weight and quality of material, in machining time, and short cuts, can go and still produce a reasonably satisfactory machine. These cost saving devices are ob-

jectionable but understandable. My chief complaint concerns faults in design which need not exist.

Let's get down to cases to illustrate. Most of us select lapidary machinery from catalogs with no opportunity to see or hear it in operation beforehand. We learn the hard way. Here are some of the things I find wrong with an extensively advertised ball-bearing grinding and polishing arbor.

The frame is of the box or shell type and is an aluminum casting barely $\frac{3}{16}$ " thick or just about as thin as it can be cast in regular production. Why aluminum? — It machines faster. Machine tools have cast iron frames of generous cross section.

The base is too small for stability.

The holes provide for $\frac{1}{4}$ " holding down bolts (too small) which bear on a shoulder about $\frac{1}{2}$ " from the bottom of the frame. As the tops of the bolts are so far above the table they are prone to sway with every revo-

lution of the wheels as these are never perfectly balanced. I have had to secure metal strips to the table top on two sides of the base to prevent its twisting and squirming.

The motor must be located on top of the table directly back of the arbor, where it takes up valuable space and the belt is exposed; or the motor must be directly under the arbor where it is in the way of one's knees when sitting at the table. No provision is made for locating the motor under the table and back of the arbor with a diagonal belt connection between them. This is usually the most suitable motor location.

The arbor was equipped with a belt that proved too short for my set-up. The three step pulley was reversed. To correct this or to change a belt at any time it is necessary to *drive* the shaft out of the bearings. The bearing housings should be split horizontally so that the caps may be removed and the shaft lifted out.

The ball bearings are very noisy. I can hear the arbor, when it is running idle, on the floor above. Ball bearings are not necessarily noisy, for example, in a good standard make motor they are practically noiseless.

The aluminum bracket provided as a rest and guide for the diamond truing tool is too flimsy to be used without extra support from below. I have discarded it and built a rigid removable guide. The steel block which carries the diamond has only 1" long contact with the bracket and consequently cocks when one tries to slide it along the grit covered bracket.

The frame should have a switch mounted on it, like shop grinders, to start and stop the motor.

A diamond saw which I purchased has the following faults:

The base which serves as a tank for the lubricant is much too small. The 8" dia. saw blade comes to within about $\frac{1}{2}$ " from the bottom and after 15 or 20 minutes of use the mud collects to a depth where the saw picks it up and carries it up to the cut. To drain this tank a $\frac{1}{8}$ " pipe size hole with a plug is provided near the bottom at the front of the tank. Of course the mud will not flow out so small an opening in that location. The hole should be at least $\frac{3}{8}$ " pipe size. To clean the tank one has to take out four screws which secure the thin sheet steel table to the top of the tank and then remove the saw blade and scoop up the mud with a long handled spoon.

The clear plastic splash shields that are recommended so highly on saws are smeared with cutting fluid in the first few seconds of operation and might as well be metal, at less cost. The large saws especially give poor visibility of the cut when in operation, unless one lifts the lid or flap and gets showered with cutting oil. I note one such saw has the weight cable attached to the center of the carriage which tends to cock it. The feeding force

should be applied as nearly as possible in line with the saw blade.

These are some of the things which are wrong with some lapidary equipment. The list of faults could be lengthened considerably but I have undertaken to point out only a few and possible remedies.

It would be a worth while service to the amateur lapidary to point out such faults and to advise him to see the equipment in operation and talk with someone who has used it before he invests.

Sincerely yours,
E. T. McCarthy
Hamilton, Ohio

Feb. 28, 1953

Editor's Note:

The above is a good letter on lapidary machinery written by someone who is well versed in design problems.

E. T. McCarthy started firm foundations for an engineering career at Cornell University. After a period as Assistant Professor at Georgia School of Technology, there came the World War in which Major McCarthy served in the Artillery Corps. As mechanical engineer with Sargent & Lundy, and later as president of Mercon Regulator Co., he has been associated for many years with power plants and their valve problems.

Formerly chief engineer for Klipfel-Swan, he is now retired.

Ohio Subscriber Wins Mineral Honor!

On April 11, 1953, William Brownlee, 17 year old member of the Toledo Mineralogical Society, won superior rating at the Junior Academy of Science at Bowling Green University for his collection of minerals. That is the highest rating and entitled him to display his collection at Science Day held by the Academy of Science at Ohio State University on April 24th. He won a superior rating there also and very favorable comments from the many hundreds of persons who were attracted to his collection.

Mr. and Mrs. Elmer Edenburn and Cal Gettings of Toledo, Ohio, sided and inspired him to a great extent, and his copies of R&M are of course his favorite reading.

William lives at 616 Maple St., Perrysburg, Ohio.

Read from Cover to Cover!

Editor R & M:

I am enclosing a \$3.00 check for a year's subscription to your fine Mag. A friend gave me an old copy, May-June-52, and I have read it from cover to cover and crave more of the same.

Clarence Martin
R.F.D. 3
Blackfoot, Idaho

Apr. 16, 1953

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Items on Interesting Sands Wanted. — Please Send Them In.

Beach Sand from Alabama

A short note, dated Feb. 13, 1953, comes from Mrs. Theodore H. Shepard, Sr., 420 Russell Ave., Long Beach, Miss. It reads:

"I was on the Gulf of Mexico yesterday and got this sand from 'Gulf Shores,' southernmost part of Alabama in Baldwin County and am pleased to send it to you."

The sand sample accompanying the note is a coarse gray sand consisting entirely of quartz (colorless, with a little white and some brownish).

Magnetite Sand from Selvia Beach, Calif.

Arthur W. Browne, 623 Palo Alto Ave., Mountain View, Calif., has sent in a sand sample from Selvia Beach, Monterey Co., Calif. It is a dark brownish medium grained sand consisting of magnetite (black and nicely rounded), and quartz (smoky, brownish). The brown color of the quartz is due to earth staining.

The label with the sample tells us that the sand comes from a spot $\frac{1}{4}$ mile south of Selvia Beach on top of cliff—below Monterey.

River Sand from Conn.

On Feb. 14, 1953, the conductor of this department, while on a short trip to Connecticut with his cousins, Eddie and Margie Bourne of Peekskill, N. Y., made a stop to collect a sample of sand from the east bank of the Housatonic River, 0.7 mile north of bridge crossed by U.S. 6 in Fairfield County (1 $\frac{1}{2}$ miles west of the bridge U.S. 6 goes through the little town of Sandy Hook). U.S. 6 follows the east bank of the river for several miles but nowhere was any sand to be seen—just plain black mud; we had to go over a half mile out of our way (0.7 mile north of the bridge) before sand could be found and here it was mixed with lots of clay.

This is a brown, medium grained sand consisting chiefly of quartz (brownish, smoky, white) with lots of silvery muscovite, black biotite, some red garnet and black magnetite. The muscovite shows up distinctly as shiny silvery specks in the brown sand. Most of the brown color is due to clay which was mixed with the sand and had to be washed out.

Beach Sand from Dania, Fla.

Dania, a big winter tomato shipping center in Broward Co., Fla., is on the Atlantic Ocean. From the beach of this little town we have an interesting sand sample that was collected by Fred McMurtrie, 1709 S.W. 14th St., Fort Lauderdale, Fla.

This is a coarse grained gray sand consisting of medium grained colorless quartz (transparent—perhaps fragments of rock crystal) and sea shells varying from tiny up to $\frac{1}{4}$ inch diam. The shells are white, creamy, brown, gray, and black and are all highly polished and rounded.

Beach Sand from Ballast Point, Fla.

Ballast Point, which juts into Hillsborough Bay near Tampa, Hillsborough Co., Fla., is world famous for its coral geodes. A good friend of R&M, Merton McKown, 114-20 146th St., So. Ozone Park, N. Y., spent last winter touring Florida and we had a special request for him—please send us a sand sample from Ballast Point—and he did.

This is a coarse gray sand consisting almost entirely of quartz (colorless, with some gray chalcedony) with many gray to white sea shells and some coarse brownish magnetite.

River Sand from E. Carondelet, Ill.

East Carondelet, St. Clair Co., Ill., is on the east bank of the Mississippi River. We have a subscriber in this town—Roger Maserang, Box 395, RR 1, East

Carondelet, Ill., who very kindly sent us a sample of sand from the river.

This is a very fine grained gray sand consisting chiefly of quartz (colorless, brownish, reddish), with some pale green epidote and black magnetite.

Oil Sand from Near Douglass, Kans.

Douglass is a little town in southern Butler Co., Kans., and very close to the Cowley County line. Glen E. Kiser, Douglass, Kans., is not only one of our subscribers but one of the country's most active sand collectors—he has sent us many samples of sand from all over the world. From an oil well near Douglass, but in Cowley County, we have received from Mr. Kiser an interesting sand sample. The label accompanying the sand sample says that it is the Bartlesville oil sand, 2800 feet down. Practically every sand sample in our collection was collected on the surface of the ground (beaches, for example) but the one Mr. Kiser sent us comes from the bottom of a hole 2800 feet deep! This beyond doubt is our 'deepest' sand but we better check on some of the others before making a positive statement. The sample is not a true sand, but a chewed up dark gray sandstone (pulverized by drilling).

This is a dark gray coarse sand—chiefly quartz but it contains also lots of tiny silvery muscovite flakes.

Beach Sand from Lubec, Maine

In the last issue of R&M (March-April) mention was made of two sands having been received from William P. Hinkley, RFD 3, South Brewer, Me. One sample was described in the March-April issue, the other is described below. First, however, let us again quote Mr. Hinkley's letter of Nov. 6, 1952:

"While I have not yet become a sand collector, I am sending you under separate cover two bottles of sand which may be of interest to report in your 'Sand Collector' column. Both of these sands come from beaches in the town of Lubec (Washington Co.), Maine, and I might add that such beaches are rare in the

eastern part of our State. The first and coarser sample might be of interest because it comes from the most easterly beach in the United States. It is only about 11½ miles west of West Quoddy Head, which is the extreme eastern tip of our nation." This sand is described below.

This is a very fine dark gray sand consisting chiefly of quartz (colorless, smoky, and dark smoky), green epidote with pink feldspar and black magnetite.

Beach Sand from Higgins Beach, Maine

Higgins Beach, near Scarborough, York Co., Maine, is on the Atlantic Ocean. A sample of the sand was collected for us by Mr. and Mrs. John C. Tanis, Jr., Morning St., Higgins Beach, Scarborough, Me. It is a gray, fine grained sand consisting chiefly of quartz (colorless, smoky, brownish) with some black biotite and traces of red garnet and black magnetite.

Two Sands from Pahaquarry, N. J.

Pahaquarry is a little community on the east bank of the Delaware River in western Warren County, N. J. (Pennsylvania is on the opposite side of the river). Pahaquarry is famous for its old abandoned copper mine—thought by some to be the oldest copper mine in the United States. On Feb. 28, 1953, a small field trip was made to the locality that was sponsored by E. J. Talamini of 164 Chestnut St., Kearny, N. J. Six people in two cars made the trip—Mr. Talamini, Deane Taylor of Montclair, N. J., Mrs. Lucy Dallavalle of Maplewood, N. J., Mr. and Mrs. Eddie Bourne and Peter Zodac of Peekskill, N. Y., Hymen E. Heater of Wallpack, N. J., who knows the locality thoroughly, was guide.

In addition to a trip through the abandoned tunnels of the ancient mine, where specimens were obtained, we collected also two samples of sand. The first sample was collected from the mine itself, from the large open cut on top of the mountain, where sand was seen exposed in the "path." This was a gray coarse sand that consists chiefly of quartz (colorless, with some white and smoky)

and sandstone (chiefly red but gray also present). Some rough grains of blackish magnetite also present.

The second sample was taken from the nearby Delaware River (across from the mine property). This was a gray medium grained sand consisting almost entirely of quartz (colorless, smoky, white, reddish) with some black magnetite and black biotite.

Beach Sand from Fire Island, N. Y.

On the western extremity of Great South Beach (a low spit of land about 30 miles long and from $\frac{1}{4}$ to $\frac{1}{2}$ of a mile wide), is Fire Island State Park. The island is popularly known as Fire Island. Great South Beach, with the shorter Oak Island Beach, encloses Great South Bay on the southern coast of Long Island, N. Y.

From the beach on the Atlantic Ocean (south side of Fire Island S. P.), we obtained a sample of sand that was sent us by Thomas Ronan, 2436 Marion Ave., Bronx 38, N. Y. A note with the sample reads:

"This is a sample of sand from Fire Island. It was collected about 200 feet east of the bathing beach near a small fence. It was collected shortly after the first hurricane and it probably had much to do with its concentration. In fact it was so windy while I was collecting it that the wind was concentrating it before my eyes."

This is a coarse gray sand consisting of quartz (colorless, smoky, brownish), garnet (red to pink), kyanite (bluish), magnetite (black), zircon (colorless, fluoresces orange under the Mineralight), and some white sea shells.

Garnet Sand from Fire Island, N. Y.

Another sample of sand was received from Mr. Ronan and it too comes from Fire Island State Park but from the north shore (on Great South Bay). The note with the sample reads:

"This is a sand sample from Fire Island. It was collected the same day that the other sand was collected. It occurs as a bed of red sand about 200 feet long

and 25 feet wide at spots and from $\frac{1}{8}$ inch to less in thickness. It rests upon a beach of white sand and at high tide is completely covered by water. Red garnet sand of the same color occurs in the dunes bordering the deposit very slightly."

This is a medium grained dark red sand consisting chiefly of pink to red garnet with some colorless quartz, black magnetite, and whitish zircon that fluoresces orange under the Mineralight.

Fire Island, which is part of Suffolk County, is reached by ferry from Babylon, L. I., N. Y.

Beach Sand from Taft, Ore.

Taft, in Lincoln Co., Ore., is a little town on the Pacific Ocean. From the beach at Taft, we have received a sample of sand that was sent in by Arthur W. Browne, 623 Palo Alto St., Mountain View, Calif.

This is a fine grained sand consisting chiefly of quartz (beautiful, colorless, gemmy—but brownish and reddish also present), green epidote, dark green to almost black olivine and a small amount of black magnetite (some showing crystal faces).

Creek Sand from Streeter, Texas

Streeter, in Mason Co., Texas, is famous for the light blue topazes that have been found in its vicinity, (as pebbles in a creek). We have a sample of sand from the noted creek that was sent us by Mrs. Ruby Renfro, 2901 Bomar Ave., Fort Worth 3, Texas.

"The sand is from Honey Creek, the famous topaz collecting creek (near Streeter in Mason Co.), where so many Austin (Texas) club members have found so many topazes. The sand comes from a spot where the creek forms a small bar. As a matter of fact I took the sand out of a very large hole where some of the Austin collectors had dug."—from Mrs. Renfro's letter of Jan. 30, 1953.

This is a coarse pinkish-brown sand consisting chiefly of pinkish feldspar with quartz (colorless, grayish, brownish).

Unfortunately no topaz, not even a tiny grain, could be spotted in the sand.

River Sand from Potomac River, Virginia

This sample comes from Roaches Run Bird Sanctuary on the Potomac River in Arlington Co., Va., and was sent us by Royce Phillips, 2625 17th St., N.E., Washington 18, D.C.

It is a coarse brownish sand consisting chiefly of quartz (smoky, brownish, colorless) with a minor amount of pale pinkish feldspar, silvery muscovite, and black magnetite.

River Sand from Roosevelt, Wash.

A number of sands have been donated by C. H. Robinson, Sr. 623½ 16th St., S.W., Puyallup, Wash. One of the samples comes from the Columbia River near Roosevelt, Klickitat Co., Wash. (just across the river from Arlington, Ore.)

This is a fine grained dark gray sand consisting chiefly of quartz (colorless, smoky, brown), with black biotite, brown feldspar, silvery muscovite and magnetite.

"Is just plain Columbia River sand I picked up at edge of the river one mile east of Roosevelt, Wash., where we were camped at the Pow Wow on Labor Day this past fall. One fine petrified wood location just opposite Arlington, Ore."—item in Mr. Robinson's letter of Dec. 22, 1952.

Sand Found in Fossil bone from Alaska

Here is another unique sand and it was sent in by Frank Waskey, Dillingham, Alaska. The sand was found in the interior of a fossil bone which in turn was found at Shishmaref (on Sarichef Island), Alaska.

"Sand shaken from Walrus baculum found near Shishmaref, Alaska. This bone had been under the ground for such a long time that its interior has been colored to an almost uniform deep black."—on label with sample.

This is a dark gray very fine grained sand consisting chiefly of colorless quartz with some pale green epidote and black magnetite.

Sandstone Sand from Wasson's Bluff, Canada

Wasson's Bluff, in Nova Scotia, Canada, is a famous locality for minerals. From the beach at the foot of Wasson's Bluff, which borders the north side of Minas Basin, we have received a sample of sand that was collected for us by John F. Mihelcic, 16543 Appoline, Detroit 35, Mich.

We expected the sand to contain some zeolites or at least some nice quartz minerals such as amethyst, agate, jasper, etc. but—not so. It turned out to be a very coarse dark reddish-gray sand consisting chiefly of reddish and gray sandstones with a small amount of smoky quartz—an unattractive sand! We were very glad to get the sample, however, as it was interesting in more ways than one. It is strange that sands from a locality famous for minerals often produce dull unattractive sands while ocean beaches, miles and miles from the nearest locality, furnish beautiful sands.

Beach Sand from Alqarrobo, Chile

Alqarrobo is a town on the Pacific Ocean about 50 kilometers (31 miles) south of Valparaiso, the principal port of Chile. From the beach at Alqarrobo we have received a sample of sand that was collected for us last year by W. T. O'Gara, 1937 Hurley Ave., Fort Worth 4, Texas.

This is a medium grained gray sand consisting chiefly of quartz (colorless, smoky, white), and sea shells (white, gray, pinkish), with some greenish mica, greenish epidote, and black magnetite. This is quite an attractive sand and due to the silvery iridescence of the white sea shells could be called "silvery sand".

Wadi Sand from Wadi Gindali, Egypt

A wadi is a river or small stream. From Wadi Gindali, southeast of Cairo, the largest city in Egypt, we have received a sample of sand from Dr. C. H. Barlow, Box 54, Trumansburg, N.Y., who had collected it a few years ago when he was residing in Egypt.

This is a very fine grained gray sand consisting almost entirely of quartz

(chiefly colorless but a little white and brownish also present); with a little black magnetite.

Quartz Sand from Oslo, Norway

The following letter, dated Feb. 24, 1953, is from Homer A. Davis, 524 Putnam Ave., Cambridge 39, Mass.

"I am sending you under separate cover a sample of sand which comes from the ruins of St. Olaf, Oslo, Norway, with the following information.

"Knut Carleson, a friend of mine who after an absence of 27 years from his native Norway, returned to his homeland for a three weeks vacation from the Massachusetts Institute of Technology—flying each way. Upon his return he brought me a sample of sand from the old and historic ruins of the Monastery of St. Olaf, which was founded in the year 1230 in Oslo, now the capitol of Norway.

"The sand was collected from beneath the ruins of the old Monastery by the Rev. Olaf W. Haaje, Chaplain to the Bishop of Oslo, St. Halvards Plass 3, Oslo, who donned his rubber boots, invaded the old ruins and from beneath the rubble obtained the sand for Mr. Carleson who in turn gave it to me.

"The church of Oslo about that time had acquired considerable landed property which produced the See a goodly income which was used to build churches and monasteries throughout the land. Today, but few ruins of the first old town remain to bear witness to its pristine glory. There follows a long and interesting story from the Monastery of St. Olaf to the Oslo of today.

"Although the sample appears to be a sand which has laid in aqueous surrounding over the years in the dust of the ages, it serves as a connecting link between the ancient past of Norway to the present Oslo with its modern buildings, its beautiful parks and scenery. There are a few old houses left in Oslo, but none as old as the ruins of St. Olaf."

The sand contained considerable gray

clay which had to be washed away. The washed residue is a dark gray coarse sand consisting chiefly of smoky quartz with some pinkish feldspar and a little black magnetite.

Desert Sand from Britain's Largest Desert

Who would suppose that there is a desert in the British Isles! But there is, according to a letter dated Dec. 26, 1952, received from Sandy Ramsay, 1015 Aikenhead Road, Kings Park, Glasgow S4, Scotland.

"I have been promised some sand from Britain's largest DESERT, known as the Culbin Sands. Look up the map I sent you—between Forres and Elgin in Morayshire, Scotland, and you will see a river, the Findhorn. At the mouth of the river (in Findhorn Bay) is the Culbins. Way back in the 16th or 17th century the village at the mouth of the river was engulfed by sand during a great storm. Will try to get particulars for you when I send the sand."

A 2nd letter from Sandy, dated Jan. 29, 1953, reads:

"I sent you a sample of the Culbin Sands which comes from Britain's largest desert caused by a great storm in the 16th or 17th century, which engulfed the village at the mouth of the Findhorn River, and has gradually spread, but now the land is being reclaimed by planting grasses."

Culbin Sandhills borders the western edge of Findhorn Bay, near Forres, Morayshire in northern Scotland. Along with the sand sample, Sandy sent also two ESSO road maps (Northern Scotland and Southern Scotland). These are standard Esso maps (just like any State maps) and we were very glad to get them. These are the first foreign road maps we ever saw that were put out by an American oil company.

The sample is a fine grained light brown sand consisting chiefly of quartz (colorless, smoky, brownish) and feldspar (brownish, grayish) with some silvery flakes of muscovite.

Beach Sand from Tyree Island

Another sand sample sent us by Sandy Ramsay of Glasgow comes from the western end of Tyree, a small island of the Inner Hebrides (west of Scotland's mainland). Tyree (or Tiree) is 13 miles long and about 6 miles wide.

The sample sent us is beach sand from the Atlantic Ocean. It is a medium grained gray sand consisting almost entirely of broken up sea shells (white, brown, pinkish), with a very small amount of colorless to smoky quartz.

Quartz Sand from Phalanx, Ohio

A nice sample of quartz sand has been received from Carl Dapper, 148 Henderson St., Old Forge, Penn. It was dug in Phalanx, Trumbull Co., Ohio, and used by the Erie Railroad Co.

This is a coarse, orange-brown sand consisting entirely of quartz (brownish, and smoky).

A cousin of the Editor of R&M spotted the big jarful and wanted to take it home with her— she thought it was corn meal! Can you imagine that? Mistaking a sample of valuable sand for common ordinary corn meal!

Beach Sand from San Juan, Puerto Rico

San Juan, capital and largest city of Puerto Rico, is in the northern part of the island and on the Atlantic coast. From the beach of the city we have received a sample of sand that was collected by Donald W. Sanderson, Comp-hibitant Band Unit 189, USS Pocono, AGG 16, F.P.O., New York, N.Y.

This is a brownish-gray coarse sand consisting of quartz (smoky, brownish), and coral (gray, pink, white), with a tiny amount of white sea shells and a few grains of black magnetite.

Beach Sand from San Pedro, Calif.

From Cabrello Beach in San Pedro, Los Angeles Co., Calif., we have a sand sample that had been collected by Mrs. Wm. Flight, 735 Minooka Ave., Moosic 7, Pa.

This is a fine grained dark gray sand consisting of quartz (smoky, colorless),

feldspar (brown, white), black lustrous hornblende, and minor amounts of green epidote, black magnetite, and silvery flakes of muscovite.

Beach Sand from Cape St. Francis, So. Africa

Cape St. Francis is in the southern part of Cape Province, South Africa, on the Indian Ocean. From the beach at the cape we have a sand sample that was sent us by Ernest M. Skea, Box 46, Pilgrims Rest, Transvaal, South Africa.

This is a fine grained brownish-gray sand consisting entirely of colorless quartz and sea shells (white, and brownish).

In his letter, dated Jan. 6, 1953, Mr. Skea, informs us of an honor recently conferred on him. He writes:

"His Holiness, Pope Pius XII, deigned to award me the gold Papal decoration, 'Pro Ecclesia et Pontifice Cross', for loyal and meritorious service to our church in eastern Transvaal. At a gathering of Catholics from many parts of the Diocese, I was recently decorated by the Bishop after the arrival of the cross and accompanying Scroll from the Vatican. Whatever service I have rendered was done as a humble but willing Catholic and with no thought of a reward. I was deeply touched by all the nice things said about me and the congratulations from young and old. Anyhow, I wonder if I am the only member of the Rocks and Minerals Association to wear a Papal decoration?"

We are delighted to hear of the Papal decoration awarded Mr. Skea and do hope he may continue to serve his God, Church, and Country. As far as we know, Mr. Skea is the only member of the R&MA to wear a Papal decoration.

R. P. LAMBRECHT HOSPITALIZED!

Robert P. Lambrecht, 21307 Raymond Rd., Maple Heights, Ohio, has spent the last 4½ months in the Marine Hospital in Cleveland, Ohio. "Please tell all my friends that I am very sorry about the delay in writing them, but will try to rectify this as soon as possible." — from his letter of May 17, 1953.

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

East

Mineralogical Society of Pennsylvania Lapidary Meeting

The pouring rain and howling wind which dominated the weather scene on February 15th, 1953 did not prevent the gathering of the lapidary clan of M. S. P. at Quarry Garden Farm, Lansdale, the home of Gene and Charles Belz.

They appeared forty strong, coming by car and train for the combined meeting and valentine party, clothes wet, but enthusiasm undampened.

Chairman, Gene Belz called the meeting to order at 2:30 p.m. and after the reading of the minutes by Secretary Russ Bell she started the program with a talk on Variscite and Turquoise. First, she sketched the historical background of these gems and then gave their mineralogical background, including physical properties, chemical composition, association and the lapidary techniques involved in the polishing of these minerals.

Her talk was followed by a spirited discussion during which rough and polished specimens of these minerals, which had been brought in by members of the group, were passed from hand to hand.

She told us that the Persian horsemen prized Turquoise as an amulet to protect their horses from falling and that the Navajo Indians of our Southwest treasured Turquoise as a good luck stone which would protect its wearer from evil. We also learned that Variscite, found in the United States, in Northern Utah was fourth in American gem production last year.

Next, member Charles A. Thomas, conductor of the "Mineral Shoppers" guide, gave us a most enlightening talk on Garnet, illustrated with many fine specimens from his own collection and hostess Gene Belz' collection. From his historical sketch we learned that the origin of the name Garnet is lost in antiquity and that many mineral collectors like to think of the garnet as the seed of the earth; while the ancients probably likened it to the seed of the pomegranate or its color to cochineal.

After going over the crystallization, the chemical composition and the varieties of the mineral it was discussed from the lapidary angle. He finished his talk by giving the loca-

lities covering the United States where this interesting mineral could be found. The most interesting to us were the following Pennsylvania localities:

GROSSULARITE: Berks County: Fritz Island, Dauphin County: Hummelstown. Delaware County: Leipers Quarry, Lehigh County: Limeport. Philadelphia County: Cobbs Creek Valley, Wissahickon.

ALMANDITE: Bucks County: Eden, Finney's Quarry, Hulmville, Mt. Misery, Newportville and Trevoise. Chester County: Avondale, Corundum Hill (Newlin), Craig's Farm (Pennsbury) Goshenville, Johnson and Patterson's Quarry (Newlin). Rose's Quarry opposite Miquon, large andradites have been found nearby. One almost three inches across and mustard color, not unlike polyadelphite was often seen in a boulder near Chester Springs. It no longer exists as a beautiful xl due to hikers trying to extract this huge garnet. The hole in the boulder can still be seen.

GARNETS to walk on: Opposite Miquon, there is a small trail leading upwards toward the new super hi-way road bed. Garnets can be gathered here by the quart.

SPESSARTITE: Berks County: Bernharts. Chester County: Osborn Hill, Avondale, Boothwyn, Burk's Quarry and Concord Township; Philadelphia County: Fairmount Park, Holmesburg, Germantown and Roxborough.

ANDRADITE: Berks County: Bernharts. Bucks County: Newhope. Chester County: French Creek Mines, Garnet in sand at Wilson's Corners, on the French Creek in a small tributary just before it flows into the Merz property. Hopewell Mines, Steel's Mine and Warwick Mines. Lebanon County: Cornwall. Lehigh County: Hosensack Station. Montgomery County: Kibblehouse Quarry, Perkiomenville.

Two lovely valentines, Martha Hopkins and Clara Thomas, helped our valentine queen, hostess Gene Belz, serve delicious heart shaped cakes and candies with coffee and tea.

After an hour of socializing, filled with knowledge, sweets and the warmth of companionship, we left, well fortified for our trip home in the rain.

M. S. P. First Annual Lapidary Exhibit

Despite the pouring rain, on Sunday, March 15th, 1953, 60 members and guests attended the first annual exhibition of the Lapidary Section of the Mineralogical Society of Pennsylvania at the interesting home of Secretary, Russell A. Bell, 320 Kent Rad, Bala Cynwyd, Pennsylvania.



Lapidary Exhibit, Mineralogical Society of Pennsylvania. — Left to right: Mrs. Gene Belz, Lapidary Section Chairman; Russ Bell, Section Secretary and Host; and Leonard J. Duersmith, Mineralogical Society of Pennsylvania President.

The exhibit was displayed in the huge living room and dining room overflowing into the cellar.

It was divided into the following classes: Cut and polished stones, jewelry without stones, jewelry with stones cut by exhibitor, jewelry with stones not cut by exhibitor, metal jewelry not cut by exhibitor, but mounted with exhibitors stones and a class of sculpture and carving. There was also a "bragging table" for members who had something beautiful to show, but were not lapidaries.

Of the 20 exhibitors, 14 showed the best results of their own creative ability in metal work, original design, the cutting and polishing of many varieties of cabochons of many different materials, faceting, large flats and carvings.

We would like to thank and congratulate these members for their fine work and cooperation: Ellen Davidson, Lois and Walter Lawn, Helen and Otto Bauhof, Ellen Pietsch, Paul Seel, Betty and Russ Bell and Forest Lenker for their most attractive silver, gold and copper handwrought jewelry with and without stones . . . Helen Bauhof for the silver forks and spoons set with polished stones, various cabochons especially jades . . . Charles Thomas for his unique combination of polished Perkiomenville Natrolite with driftwood in a shadowbox frame . . . Leonard Morgan for the polished pieces of New Jersey Carnelian . . . Forest Lenker for the penholder of Lepidolite and Paul Seel for setting up a microscope showing how to identify synthetic

and real Sapphires by their inclusions for a fine display of natural crystals and faceted stones of similar materials.

The other 7 exhibitors not actively interested in lapidary procedures entered their material in the "bragging table" class which was experimental and turned out to be a pleasant surprise. Congratulations to Wylie Flack for showing us the handsome Argentine Rhodochrosite polished slab and brooch, obsidian sphere, iris rainbow agate and a superb specimen of crystallized English Fluorite . . . Gerry Shulman for a ten pound specimen of green Wyoming Jade . . . Martha Hopkins for the small exquisitely hand shaped Chinese snuff bottles of Rock crystal agate and amber . . . Will Shulman for the large specimen of Paterson Prehnite with casts after anhydrite . . . Dr. Arthur Hopkins for the gem possibilities in fossilized agate, Dinosaurs bone, algae etc. . . William Haeberle for his Perkiomenville Calcite specimen . . . Dr. Davidson for his synthetic obsidian spheres and the ultra violet light to show their fluorescence and phosphorescence.

Junior member Walter Bauscher of Hadonfield, New Jersey, surprised us all with a delicately carved old man in ivory and a skull carved on Turquoise.

Lapidary section Chairman, Gene Belz, bolstered the exhibition by displaying her fine work in all classes.

As usual Betty Hurst did an excellent job as registrar.

After a welcome speech by M. S. P. Presi-

dent, Leonard Duersmith, and a short meeting presided over by Lapidary section Chairman, Mrs. Gene Belz, we toured our hosts lapidary shop and delicious refreshments were served by our lovely hostess, Betty Bell.

Those who braved the weather saw so many beautiful things and met so many charming and interesting people that it was unanimously decided to have a similar exhibit next year.

Field Trip to Wood's Chrome Mine

On Sunday, March 22nd, 90 members and friends of M. S. P. gathered at Wood's Chrome Mine, Nottingham, Lancaster County, Pennsylvania. This was a return visit to this always interesting locality and a second attempt for the month. Our first scheduled trip on March 8th was eliminated by a one foot snowfall in Lancaster County.

According to the research done by the staff of the *Keystone Newsletter* in the *2nd Geological Survey of Pennsylvania, 1877* . . . "This mine is famous throughout the whole civilized world for specimens of minerals which it has furnished to all cabinets. It lies in a great sweeping oxbow of the Octoraro, in the extreme southern end of Little Britain township . . . The mine was opened in 1828 by Isaac Tyson. The property was purchased in fee simple. Mr. Isaac Tyson used the magnesian rocks which occur in the 'Bare Hills', near Baltimore, and followed up the range into Pennsylvania, in his search for more raw material for his manufacture of Epsom salts, etc. This brought him into contact with the chrome ores which accompany the same rocks and he was led into the manufacture of the chrome salts as pigments, etc. These were traced through Maryland and into this corner of Pennsylvania, where the richest return was made. The ore from the Wood Mine is hoisted out by a horse whim . . . The body of ore varies in thickness and strike, but is constant in depth. The Serpentine which forms the 'country rock' here is unstratified and is about $\frac{3}{4}$ mile in breadth. The strike of the vein is about W. 12° S. The sandy chloritic slates to the north of the mine dip S. 50° . One mile S. E. is Black Branch Run containing about 38% Cr_2O_3 . The stream chrome ore from Wood's Mine contains about 46% Cr_2O_3 . . . Reports that the rocks S. E. of the mine are hornblende and that a region of Syenite commences on that side of this Serpentine deposit . . ."

About 125,000 tons of ore have been taken from this deposit, the largest body of pure Chromite ever found in North America.

We were all happy to see our former chairman of the safety committee, Bob Ennis, who attended with his parents and who sparkles in his Army uniform. Bob told us he is practicing the "delicate art" of G. I. cookery and

promised to cook us a G. I. meal when he returns to civilian life.

Vice President, Floyd Faux, was digging with his usual good luck and generously passing out his finds to our newer members.

Member, Mrs. Ellen Davidson of Claymont, Delaware, took time out to pursue her auxiliary hobby, painting water colors, and while recording her impression of the landscape had a constant stream of visitors who enjoyed and appreciated her artistic talents.

The minerals found included Chromite, Picrolite, Brucite, Deweylite, Serpentine, Kammererite, Genthite and Zaratite thus proving again that Wood's Chrome Mine still produces many fine and showy cabinet specimens.

Toward the end of the day, a grass fire (caused by a farmer who was burning off brush and lost control of it) was discovered raging in a field not too far from the mine. Uneasiness over the possibility of the fire cutting off the road into the dump area caused some rapid exits by the remaining members and brought a precipitous end to a wonderful day.

Gerry and Will Shulman
Co-Chairmen Publicity Committee
113 Huntington Terrace
Newark 8, N. J.

North Jersey Mineralogical Society (Paterson, N. J.)

The North Jersey Mineralogical Society has launched a project designed to give its members increasingly better acquaintance with mineral locations throughout the country.

A large outline map of the United States—5 by 7 feet—has been set up in the Paterson Museum where the society holds its meetings, and on this map are placed small paper banners bearing the mineral names, pin-pointed at the exact locations of the mineral occurrences. The placing is done by members of the society who have visited the locations and have personal knowledge, in most instances.

The project was inaugurated at the March meeting, and will be maintained as a permanent and growing feature. Its purpose is to provide a visual aid to learning what minerals are found, or have been found, at certain places. Additions will be made to the map from time to time. A special map of the society's home state of New Jersey is set up with the national map and will be pin-pointed in the same manner. The plan was originated and will be supervised by William C. Casperson, Curator of the Museum and program chairman of the society.

A permanent record book will be kept, with pages for each state, and will to some extent include information on how to reach the collecting grounds contemplated by anyone planning a trip.

A second new undertaking of the North Jersey society is a mineral exchange, also on a permanent basis. Under this plan members who have extra specimens, duplicates or the like, may bring them to the Paterson Museum where they will be evaluated, properly labelled and placed on display in a special cabinet. As contemplated, a supply of exchange specimens will be built up, and a contributor may supplement his own collection from it. This project will be supervised by Miro Bianchi, Assistant Curator, who will endeavor to see that exchanges are made as equitably as possible.

By starting the project early in the season it is hoped that members will become exchange-conscious and on their spring and summer collecting trips will bring home a few extra specimens for this purpose. Only those specimens will be acceptable, it was explained, which have merit as additions to a mineral collection. The exchange will not be allowed to become a junk depot.

Unavoidable circumstances delayed the society's annual meeting, usually held in January, so that the newly chosen officers assumed their places at the March meeting. They are: President, Henry Mullner vice president, Wilfred Welsh; secretary, Mrs. Louise Borgstrom (re-elected); treasurer, Harold Gabriels (re-elected); member of board of directors for three years, Ray Jones.

Nine new members were admitted to the society in February, four in March, and three applications are pending.

Marian Brown Casperson
Publicity Chairman
9-11 Hamilton St.,
Paterson 1, N. J.

New York Mineralogical Society

The January meeting was held in Philosophy Hall, Columbia University, New York City, on January 21, 1953, and was called to order by our President, Leo Neal Yedlin at 8:07 p.m. The minutes of the last meeting, December, were read by the secretary, corrected and accepted as read.

The names of Mr. Whelan, Mr. Di Rienzo, Mr. Megerdichian, and Mr. Hartman were read for the second time and elected as new members. The name of Daniel Rindner, 3463 Eastchester Road, Bronx, New York was read for the first time.

A motion was made to dispense with the reading of the subject matter included in the minutes pertaining to the speakers talk, to state only the title of the talk. The motion was seconded, discussed and passed.

Minerals were displayed by two members. Mr. Bob Hartman showed Colusite from Butte, Mont. Mr. Al Peppis showed Moonstone, Albite xls and Molydenite xls, large size from a new collecting area. The Di Rienzo Bros. Quarry at Yonkers, N. Y. Mr. Peppis gave a short resume on this quarry stated that collectors were welcome and gave directions on how to

reach the quarry. It is a worth-while place to visit.

Excellent color slides were shown by Joe Rothstein taken on the N. Y. Mineralogical Club Field trip to Baker Field. Much excellent Dolomite was shown and there was a fine color view of a lovely arched steel bridge.

A new book was reviewed by Dr. Stenbuck, entitled: *IDENTIFICATION QUALITATIVE CHEMICAL ANALYSIS OF MINERALS*, by Orsino C. Smith—new second edition, published by D. Van Nostrand Co. The verdict rendered was that the book was excellent except for the color plates.

Our president mentioned that the Strickland Quarry, Collins Hill, Portland, Conn., was operating but that visitors were not welcome. Excellent Bertrandite and Beryl have been reported from there.

Branchville, Conn., was also operating with excellent Cytrolite reported from there.

Mr. Yedlin next introduced the speaker: Professor Cornelius Hurlburt of Harvard University.

Professor Hurlburt spoke on Wines and Mines of Morocco but warned the club that the talk would be long on Arabs and short on geology.

A profusion of excellent colored slides illustrated the area visited from the Mediterranean Sea to the High Atlas Mts. Many Arabs were seen as well as vineyards, and much was learned of the living conditions of Morocco, but geology was not too absent. There were excellent views of mining operations both poorly conducted ones; and extensive, well capitalized mines worked with modern methods. These showed workings of manganese, lead and zinc, tin, tungsten, petroleum, fluor-spar, anthracite, iron and phosphate.

The fluorspar operation was particularly of interest in that it was a massive deposit and a potential large scale producer. This was true also for the iron mine with hematite assayed at 45% Fe. The anthracite mine was the only one in this area but was an excellent deposit of high quality anthracite. The phosphate mine was extensive, the rock high in phosphorus, and was an excellent area for collecting plentiful well preserved sharks teeth.

The talk was followed by a question and answer bee, well participated by the members.

The meeting was adjourned at 9:50 for the club's annual social and refreshments.

Mrs. Yedlin obliged with her usual tuneful piano renditions. The 10 lb. hammer men swapped tall tales midst copious drafts of the dry, frosty and frothy stuff, while the 3 lb. hammer men had tea and cakes around the samovar.

A very enjoyable evening was had by all.
Victor Pribil
Secretary Pro-Tem.

Rockland County Mineral & Gem Society

The Rockland County Mineral & Gem Society held its regular monthly meeting on Friday Feb. 27th, at the Finkelstein Memorial Library, Spring Valley, N. Y. Three new members were welcomed to the organization.

Mr. Gilbert Pugsley of New City, N. Y., who is the President of the Society, informed the members that their exhibit in the recent Nyack Y M C A Hobby Show was awarded a Gold Ribbon for 3rd Prize. The exhibit, which featured a large group of fluorescent minerals from Franklin, N. J., drew considerable favorable comment at the show.

During the meeting Mr. Lester Peper, Spring Valley, N. Y., conducted a discussion on Quartz. Several fine specimens of Quartz were shown, including a tabular form, and some very good crystals.

A field trip has been planned for Saturday, March 14th.

The Rockland County Mineral & Gem Society meets on the last Friday of each month in the Meeting Room of the Finkelstein Memorial Library in Spring Valley at 8 P.M. All rock hounds are invited to attend.

George Mathsen, Publicity Chairman
32 Washington Street
Nyack, N. Y.

Nutley Mineralogical Society

Nutley 10, New Jersey

February Field Trip

Because of the desire of several members to return there, the club held a field trip on February 21 to the Baylis and Kinkel Quarries at Bedford, New York. Although it rained, especially in the early morning, it cleared sufficiently for collecting during the afternoon.

We first went to the Kinkel Quarry, and were somewhat disappointed as we found only tourmaline crystals. Some of these measured up to several inches in length, many showing good termination. They were rather weatherworn, and often crumbled as they were loosened from the matrix.

Turning our attention to the nearby Baylis Quarry, we had better luck, finding specimens of beryl, spessartite, mica and feldspar as well as the radioactive minerals columbite, autunite, and phosphuranylite, including many specimens of excellent quality.

March Field Trip

In March we decided to visit a new locality, and chose the American Copper Mines at Somerville, New Jersey. We entered by an old quarry, and were surprised to discover no copper in any form.

After being led to the old mine dump, we found what we were searching for. Many copper minerals were found, including azurite, malachite, bornite, cuprite, and hydrocuprite, as well as hematite, limonite, quartz (var. jasper), and calcite crystals. The members

considered themselves fortunate when they found some pieces of native copper, after digging. Many of these made excellent specimens when cleaned off with acid.

April Meeting

At our April meeting we elected officers for the coming year. Those elected were:

Secretary—William Norlander

Treasurer—Bevan French

We also discussed our plans and field trips for spring and summer, as well as other business.

We came to the conclusion that we should continue to exploit new localities this year, including Warwick, N.Y., and West Redding, Connecticut.

Anyone wishing to attend these trips or wishing other information about the club is requested to contact the secretary.

William Norlander, Secretary
74 Overlook Terrace
Nutley, New Jersey

Newark Mineralogical Society

The Newark Mineralogical Society meets at 3 P.M. on the first Sunday of each month in the Science Department on the third floor of the Newark Museum, Newark, N.J. Visitors are welcome and are invited to come early so that they may get acquainted during the social hour which begins at 2:30 P.M.

December Meeting

At the December meeting Gene Vitali, newly elected president of the Society, announced the following members as chairmen of standing committees for 1953: Program, Edwin Bemis; Membership, Sarah Sherlock; Outing, Robert Fitton; Publicity, Lucy DellaValle.

The speaker for the afternoon was Professor Ralph Holmes of the Department of Geology, Columbia University, who lectured on "Iron Deposits of Northern Quebec". Professor Holmes supplemented his lecture with color slides illustrating the difficulties faced by geological parties looking for new sources of iron ore in the Hudson Bay country.

January Meeting

Mr. Paul M. Tucker, who is associated with the Standard Oil Company of New Jersey in the capacity of Regional Geologist for South America, gave a most instructive talk on "Oil Exploration" at the January meeting.

Mr. Tucker first discussed areas in the world known to be oil producing potentialities. Then, in order to emphasize the enormous expense involved and time consumed in locating a new oil field, he assumed for the afternoon that his listeners were the company seeking oil, told how much money would be required for the enterprise, and pointed out how these funds dwindle in each phase of the exploration. At the conclusion of his talk most of the members had acquired a new respect for oil and marvelled that it can be purchased so reasonably.

January Outing

On January 24th the Society was entertained by professors of the Geology Department of Rutgers University and their wives. Despite a heavy rain which made driving hazardous, forty members of the Society met early in the afternoon at the Geology Building on Queens Campus in New Brunswick. A lecture on New Jersey minerals preceded a guided tour of exhibits and laboratories. Later, the professors' wives graciously entertained in the lounge where delicious tea and pleasant conversation brought to conclusion a rich afternoon at this historic old institution of learning.

February Meeting

Two motion pictures provided by the United States Bureau of Mines were shown at the February meeting.

"Arizona and Its Natural Resources" carried the audience on a tour of the state that every mineral hobbyist hopes someday to visit. Special reference was made to vast mineral deposits and the mining industry, but the picture also covered forestry, agriculture, and the problem of irrigation.

"Nickel Mining" took us to the Sudbury District of Ontario and introduced us to the operations of the International Nickel Company. During the showing of the picture considerable difficulty was encountered with the sound track. While this was being corrected M. Shroeder, one of our members who has visited the International Nickel Company, spoke extemporaneously to clarify some of the sequences that had been confusing.

Lucy S. DallaValle
Publicity Chairman
2 Jefferson Avenue
Maplewood, New Jersey

Chattanooga Rock & Mineral Club

The following meetings all were held in Room 108, Brock Hall, Univ. of Chattanooga, Chattanooga, Tenn., at 7:30 P.M.

Jan. 13th

Mr. Chas. J. Seitz, mining engineer, gave an interesting account of his experiences in prospecting for gold in the jungles of South America. He told of Indians, snakes, floods and mud, and of native mining methods.

Feb. 10th

Mr. Denis E. Johnson related his speleological activities. Unfortunately, the writer was absent from this meeting but was told that the presentation was excellent, that caves were more than just holes in the ground, that they actually had character.

March 10th

Geo. C. Olmsted talked on "Biblical and Other Gems." He showed charts displaying the differences of interpretation of the gems on the breast plate of the High Priest, as given by the Bible, Josephus, and Ency. Brit.

Geo. C. Olmsted
Corres. Secty.
1129 James Blvd.
Signal Mountain, Tenn.

Mid-West

Cincinnati Mineral Society

The officers of the Cincinnati Mineral Society for the current year are:

President Thomas Wiebell
Vice-President Dr. Gerald Friedman
Secretary John W. Pagnucco
Treasurer Joseph Tressell

The Society has arranged an interesting and informative program for each of the monthly meetings. To date three have been given, *January*. "Hunting Fairy Stones in Virginia" by Dr. Harry Sunderman of the University of Cincinnati Geology Department. The subject covered a description of Patrick County, Virginia, its industries, and mineral deposits which include copper, iron, soapstone and lime. Fairy Stones are the mineral staurolite. The crystals are orthorhombic and are generally found twinned in a 30/60° position while the rarer twins are founded 90° to each other. These interesting crystals were formed during sedimentation when the material fractionated. The mud end of the fraction contained an excess of aluminum silicate and under pressure the staurolites were formed.

In addition to the geological and mineralogical details in the discussion, Dr. Sunderman narrated some of his humorous experiences with backwoods people.

February. "A Mineral and Rockhound in the Mt. Iliamna Region of Southwest Alaska" by Mr. Frank R. Holland of the University of Cincinnati. The speaker with a group of U.S.G.S. geologists explored some 200 to 300 square miles of this section of Alaska which included the semi-active volcanic Mt. Iliamna. It was interesting to note that the glacial debris and rocks in the vicinity were only about sixty years old. The discussion was illustrated with color slides of the mountains, glaciers, game and personnel, all of which made the presentation an interesting travelogue.

March. "Looking for Gold in California" by Mr. James Stephens, formerly with the U.S.G.S. and now of the Univ. of Cincinnati. The discussion began with a number of excellent pictures of the sea coast which in addition to their scenic beauty showed the magnitude of undercutting of the shore and mountains by the ocean. This was followed by a description of the geology of the area between the Coastal Range and the Sierra Nevada Mountains. The structural changes in the Sierras, as a result of three upheavals, were diagrammed and explained together with the geological periods involved. During the upheavals, masses of granite were forced upwards from the depths of the earth to form dikes.

It is in these dikes that gold is found. Gold bearing gravels resulted from erosion of the upper portions of this granite. Some of the gold bearing gravels were covered with lava and thereby protected until man came with placer mining methods to wash away and undercut them to obtain the gold. Placer mining, however, has been discontinued in some sections because of damage to farm lands by the gravel deposits from those operations.

The talk was highly informative and was presented in an informal and logical manner. The color slides were excellent and well selected.

An active series of field trips has been arranged by Mr. Charles Gschwind.

Meetings are held monthly throughout the year on the fourth Wednesday of each month at 8 P.M. in the first floor auditorium of the Cincinnati Museum of Natural History. Visitors from other Societies are cordially invited to attend our meetings.

The Society now has forty-one members.

J. W. Pagnucco, Sec'y.
130 Vermont Ave.
Wyoming 15, Ohio

Chicago Rocks and Minerals Society

Dr. William E. Powers, geographer at Northwestern University, spoke at the April 11 meeting of the Chicago Rocks and Minerals Society. He was one of the leaders of an international group of geographers and geomorphologists on an 8,000 mile trip around the United States. He showed beautiful color slides taken on this trip.

Among the pictures shown were some of the badlands, which Dr. Powers explained, are due to stream erosion, the Devil's Tower which is the central remnant of a laccolith. Passing over the high plains of eastern Colorado, through the fine farming country at the foot of the Rockies, they entered the mountains in the vicinity of Longs Peak. He showed breathtaking views from Trail Ridge Road. The next stop was the Garden of the Gods to see the uplifted red sandstone formations, and Pikes Peak, the top of which is a sea of rock fragments.

They went into the beautiful Jackson Hole country, and saw the Tetons, fault block mountains without foothills—one of the few mountain ranges having none. The geysers, hot springs and waterfalls of Yellowstone were viewed. That entire area, a lava plateau, was at one time covered by a glacier. They went up to the Columbia River, to the Grand Coulee dam, and the dry falls.

The tour crossed the Wenatchee valley, an orchard region, on the way to Mt. Rainier, which has more glacial ice than all the other mountains in the country together, and then Mt. Shasta, a double mountain. Yosemite Park afforded wonderful views, including some from Glacier Point, also some in the Mariposa Grove of sequoias. A stop at Hoover Dam resulted in fine pictures of Lake Mead, before going into Utah to Zion, then to both north and south rims of the Grand Canyon. Dr. Powers included some slides of Glacier Park and the Bighorn Basin. The audience greatly enjoyed the spectacular Western scenery.

Dorothy H. Gleiser, Pub. Chairman
1066 Griffith Road, Lake Forest, Ill.

South

Texas Regional Federation of Mineral Societies Formed

New Constitution and By-Laws Adopted
Succeeds State Mineral Society of Texas

At a special called meeting of the membership of the State Mineral Society of Texas in San Antonio on March 7, 1953, an entirely new constitution and set of by-laws was adopted, and the name of the organization changed to "The Texas Regional Federation of Mineral Societies, Inc."

Under the new constitution, independent and autonomous local gem and mineral societies, geology clubs, or other organizations of a similar nature, may now affiliate for mutual benefit with a regional federation taking in Texas, New Mexico, Oklahoma, Arkansas, Louisiana and Mississippi. Since the new organization is itself affiliated with the Rocky Mountain Federation of Mineral Societies, it has been pointed out that it is not in competition with any other group, and that no over-lapping in the matter of dues, etc. is possible.

There are now eight gem and mineral clubs in Texas alone, the most recent being the West Texas Gem & Mineral Society organized at Midland-Odessa, Texas on March 5, with Paul G. Rhoades, Box 3587, Odessa, Texas as first President; Harry M. Simpson, 2005 Big Spring St., Midland, Tex. as Vice-President and Mrs. Harry M. Simpson, Secretary-Treasurer. The other recent addition was the Caprock Gem & Mineral Society of Amarillo, Texas, of which J. G. Voelm was named president. Other clubs are located at Austin, Ft. Worth, San Antonio, Houston, Harlingen and El Paso, Texas.

West Texas Gem & Mineral Club

A group of rockhounds from Midland, Odessa and Andrews met in Midland, Texas, on March 5, 1953, and organized the West Texas Gem and Mineral Club.

The following officers were elected: Paul Rhoades of Odessa, President; Harry Simpson of Midland, Vice President; Mrs. Harry Simpson, Sec.-Treasurer. The meeting will be held the 1st Thursday of each month, 8:00 P.M. in the Midland County Court house.

Mrs. Harry M. Simpson
2005 N. Big Spring St.
Midland, Texas

West

Cheyenne Mineral & Gem Society

Cheyenne, Wyoming

The Cheyenne Mineral & Gem Society held its regular meeting Friday April 3, with 140 members and guests present. Invited guests were, the Mineral Society of Fort Collins, Colo., Rex Young Society of Torrington, Wyo., Kimball Rockhound Club of Kimball, Nebraska, and the Laramie Mineral Club of Laramie, Wyo.

A brief business meeting was held during which reports were made by the various convention chairmen as to the progress made for the State convention to be held in Cheyenne, June 5 and 6.

Refreshments were then served, during which time the members and guests sang Happy Birthday to our Conven. Ch. of Finance, John Longnecker.

Following the refreshments a talk was given by Fred Salfisberg on the unusual formations of crystal in the geology of the Eocene period, and displayed some of his extensive collection of Eden Valley Woods.

A high light of the evenings entertainment was a parody sung by the "Mountain Canaries" in costume about the Wyoming Mineral and Gem Convention, June 5 and 6 in Cheyenne, Wyo.

After the meeting the guests then adjourned to the R. J. Laughlin home for more Rock Talk and to view their work shop and extensive collection.

Mrs. R. J. Laughlin, Corres. Sec.
204 E. 3rd Ave., Cheyenne, Wyo.

Tucson Gem & Mineral Society

The Tucson Gem & Mineral Society met on Feb. 17th. Slides of the Harvard collection of minerals were shown by Mrs. A. H. Murchison.

A field trip to mines in Helvetia Mining Camp was taken on the 22nd and many fine specimens of copper and associated minerals were obtained.

Meeting nights are the first and third Tuesdays of each month at 7:30 P.M. in room 110 University of Arizona Library, U. of A. Campus, Tucson, Ariz.

David P. Record, Publicity Chairman
4400 So. Mission Road, Tucson, Ariz.

Hughes Rock Hounds of Tucson

The Hughes Rock Hounds of Tucson Hughes Aircraft Plant met the 9th of Feb. for election of officers. Bill Chesney was elected as President; Ed Van Scise, Vice President; Mrs. William Chesney, Secretary, and Mr. Scott Treasurer.

On the 23rd a meeting was held and plans for a field trip to Superior, Arizona, for Apache Tears was planned for the first of the month.

Results of this outing were very satisfactory and many a gem was collected for cutting. Most of the members have or plan to have lapidary equipment.

David P. Record Publicity Chairman
4400 So. Mission Road, Tucson, Ariz.

Calaveras Gem and Mineral Society

Angels Camp, California

Judging by a calendar of events already lined up, the latter few days of April and most of May should be busy for the Calaveras Gem and Mineral Society.

On April 25 and 26 they will host the Contra Costa County Mineral Society on an overnight stay at the Clubhouse grounds, and act as guides on field trips in the Calaveras County area. On the evening of April 25 a Mr. Fenninger of Folsom is slated to speak to both groups and visitors on "treasure hunting."

May 9 and 10, members will join with the Stockton, Lodi and Modesto groups, in giving a combined non-competitive gem and mineral show at the Stockton Fairgrounds.

On May 17 many of the local rockhounds will jaunt to Modesto to join in the annual Mother Lode Swap Day—meanwhile the annual Jumping Frog Jubilee will be underway at the Angels Camp Fair-grounds on May 15, 16 and 17. Members will doubtless have numerous exhibits on display there.

On April 12 Calaveras Rockhounds have been invited to join the Stockton Club in a nodule hunt in the Berkeley Hills.

At the March 21 meeting, Earl F. Holden, Vice-President of the Calaveras Club, showed picturesque colored slides. Included in the program were scenes from a southern California rockhunt, pictures of irrigation projects (Holden's vocation), and wild and domestic plant life (his avocation).

Mrs. F. E. Rankin, Pub. Chrm.
P. O. Box 17
Hathaway Pines, Calif.

Delvers Gem and Mineral Society (Downey, Calif.)

Mr. A. G. Ostergard of the Glendale Lapidary and Gem Society, speaking on the topic, "Hunting Gems in Mexico", appeared before the Delvers Gem and Mineral Society of Downey at their February meeting. Illustrating his lecture with many beautiful colored slides, Mr. Ostergard told of the interesting materials, unusual places and methods of mining seen on a two and a half month collecting trip into Mexico, which covered 6000 miles.

One of the interesting places visited was Iron Mountain, a deposit of almost pure iron which is being torn down practically by hand. Workers break up large boulders with sledge hammers and carry the smaller rock in wheelbarrows to a location near the railroad siding where it is dumped. When the train comes in, the ore is once more dumped into wheelbarrows and carried to the waiting cars.

Among the many beautiful specimens which Mr. Ostergard displayed at the meeting were vanadinite, wulfenite, black tourmaline, mangane, plume agate, white garnets, adamite, aragonite, calcite and apatite.

Over forty members and friends of the Delvers Gem and Mineral Society enjoyed a field trip on March 22 to the old Hemet Magnesite Mine near Winchester, Calif., looking for specimens of pink and black tourmaline, blue corundum, andalusite and slickenside magnesite. Sharp eyed collectors also located asbestos and garnets, some of which were as large as golf balls. Beautiful weather combined with good hunting resulted in a happy day for all who made the trip.

Jean Haygood
Publicity Chairman
8237 E. 3rd St.
Downey, Calif.

Sacramento Mineral Society

The Sacramento Mineral Society held its 17th Annual Banquet Saturday evening (Feb. 28) at the Turn Verein Hall, Sacramento, Calif. One hundred and thirty members and friends attended. The program started with the lighting of candles for each of the past-presidents of the Society, seventeen in all. Reports were given of the outgoing officers by John Baierlein, past-president, and introductions of incoming officers by George Winslow, president. Six of the past-presidents gave highlights of outstanding field trips during their terms of office. Entertainment included accordion solos by Gregg Sallee, and a dance team with Caroline Zipser and Gene Delaini of the Arthur Murray Studio. Prizes of interesting value to rockhounds were awarded holders of lucky numbers. The program was climaxed by a narrative and colored slides of Death Valley, furnished for the occasion by Scott Lewis.

The Sacramento Mineral Society meets on the fourth Friday evening of each month at the Turn Verein Hall, 3349 J St., Sacramento. All interested are welcome, with special invitation to visiting members of other mineral societies far and near.

Paul H. Steele,
Chairman Publicity Committee
Box 935, Sacramento, Calif.

Humboldt Gem and Mineral Society (Eureka, Calif.)

The Humboldt Gem and Mineral Society enjoyed an attendance of about 85 at their March session. During the business meeting, mention was made that plans will soon be underway for exhibits at the Redwood Acre Fair in June and the Humboldt County Fair in August. Sample display cases had been brought to the meeting for inspection and comment. Mr. Nash volunteered to make and bring to the next meeting a sample federation regulation display case.

Miss Cecile Clarke, curator of the Eureka Museum, asked members who contributed minerals, rocks, and polished gemstones for exhibit in the museum to label the articles with its name and the owners name.

H. L. Herrin of Clam Beach reported that he had just returned from the Klamath watershed and had brought back gold bearing gravel. Anyone interested in learning the art of gold panning may contact him at the Clam Beach museum.

The chairman of the field trip committee reported that a field trip is planned for April 12 to the beaches of Crescent City and Smith River to hunt agates and other specimen of interest.

Mr. Lou Olander gave an interesting resume of his June 1952 trip over the Alcan highway to Alaska illustrated with colored slides.

A social hour with refreshments followed the pictures.

L. Black
Chairman, Publicity Committee
2751 Pleasant Ave.
Eureka, Calif.

"New Look" is Wonderful!

Editor R & M:

Just a brief line to tell you that the "New Look" of the cover and R&M contents are wonderful! The articles were of the caliber I like and the new section on fossils is very welcome to me. If necessary, you should increase the subscription rate if it meant such a good change in the magazine. It was great before but it's super now. Good luck and keep up the good work.

Webster M. Price
Glen Falls, N. Y.

Feb. 26, 1953.

First Annual Long Beach Show
Aug. 14-16, 1953

The First Annual Long Beach Lapidary and Gem Show, which is being held at the Long Beach (California) Municipal auditorium on August 14, 15 and 16, has chosen as its theme "Lapidary Art Through the Ages."

According to Jessie Hardman, chairman of the show, the history of the lapidary art will be traced through Aztec engravings, Egyptian gems, early Chinese jade carvings, and cameos of the Middle Ages to present day techniques as illustrated by the Addison collection of cameos and the Phillips' collection, among others. Several hundred amateur displays will be shown along with professional work, films, lectures and working exhibits.

Fifteen hundred members, from twelve gem and mineral clubs in the Los Angeles area, are sponsoring the Long Beach show. Hundreds of members have requested that Southern California have its own lapidary show, and plans are to make the event an annual affair.

Last show held in Long Beach was in 1948, and was the most successful ever held on the West Coast. More than 40,000 persons attended the show and expectations are that the '53 show will exceed this figure, for gems and minerals are the fastest growing hobby in the country and Los Angeles has more rock hounds and lapidists than any other city.

Big Show for California
San Diego, Calif.
July 17-19, 1953

The largest mineral and gem show ever to be presented is scheduled for July 17, 18 and 19 when the National Convention of the American and California Federations of Mineralogical Societies hold their annual meeting in San Diego. The Show will be presented in the huge Electric Building, in San Diego's famed Balboa Park. Here, nearly 500,000 square feet of floor space will be available to exhibitors. The San Diego Mineral and Gem Society will be host for the three day affair.

Here according to Edward A. Peterson, general chairman of the convention, will be displayed over 200 cases of the world's finest mineral and gem specimens. Featured among the displays, he said, will be the many unusual gems and minerals found in San Diego County. This group includes tourmaline, kunzite, and stibiotantalite.

Special mineral and gem identification demonstrations will be presented by outstanding authorities, including Robert Rowland, curator of minerals, San Diego Museum of Natural History, and Charles Parsons, certified gemologist and fellow of the British Gemmological Association.

A feature exhibit of the show will be the lapidary demonstration presented by the San



Long Beach, Calif., Municipal Auditorium Scene of the First Annual Long Beach Lapidary and Gem Show—August 14, 15, and 16, 1953

Diego Mineral and Gem Society, which will have in operation some 16 gem cutting wheels including four faceting machines, all of which are owned by the Society and are from the Society's lapidary school.

Rockhound visitors to San Diego will also have an opportunity to take field trips to some of the regions most outstanding gem mines, including the Fargo Mine, at Pala and the famed Himalaya Mine, at Mesa Grande. Special work has been done on the Fargo Mine to make it more easily accessible to visitors. A special tunnel has been driven to link two early tunnels in the noted mine. Electric lights will be hung through the diggings, according to owner Norman Dawson.

In addition to the displays presented by various mineral and gem societies, schools and museums, over 80 of the nation's top dealers will have display booths at the convention.

Non-rock hound wives of convention goers will find their stay in San Diego enjoyable, according to Pete Brown, president of the Host Society, who announced a series of special trips to Tijuana, in old Mexico, where visitors will attend the thrilling Jai Ali games, horse races, dog races, etc.

Reservations for commercial booths at the 1953 Mineral and Gem Show should be directed to Roddy Marshall, P. O. Box 65, El Cajon, California. Other inquiries about the convention should go to Edward A. Peterson, 4045 Poppy Place, San Diego 5, Calif.

Pacific Mineral Society

That caffeine, naphthalene, nicotine and even the well known moth ball can be beautiful when projected on the screen in crystal form, was proved to the group by Mr. Mark L. Mayhue, a professional Chemist of note. The reflected colors were vivid and remarkably shaded and blended, and the forms were fantastic, as well as beautiful.

This excursion into Organic Chemistry was well worth while, even for a Mineral Society. Mr. Mayhue states that his work is purely experimental as yet, but he hopes to evolve a method that will prove valuable in identification, as forms and patterns as well as color combinations tend to appear in related materials.

We saw slides of the reagents used in Mineral identification, as the organic Dimethylglyoxime, so useful in determining cobalt and nickel.

The patterns and reflected colors, remarkably blended and shaded and repeated in related substances, seem to indicate a valuable trend.

Mr. Mayhue concluded his presentation with some film recently done by him in Mexico during the Inauguration. The tints in the night scenes were outstanding.

Our display for the month was furnished by Mr. Hecox, and consisted of Felspar crystals, Carlsbad twins and Quartzoids from the vicinity near Cinco, California. These items should inspire the Society to come in force and dig.

Our new President enthusiastically plans for our year and we know that Guy F. Morris, Jr. can do a lot of interesting things, with our help.

B. Royer
1234 W. 41st St.
Los Angeles 37, Calif.

Scotland

Geological Society of Glasgow

Session 1952-53

President: Ethel D. Currie, D.Sc., Ph.D., F.R.S.E., F.G.S., F.M.A.

The 7th MEETING of the 95th Session was held in the Geology Department, Glasgow University (Glasgow, Scotland), on Thursday, 16th April, 1953, at 7:30 pm., at the invitation of Professor T. Neville George.

COUNCIL MEETING: 7:00 p.m.

MEMBERS' MEETING

(a) Rocks from the Scourie-Laxford Bridge Area of Sutherland, by Miss E. R. Brock and Mr. A. Forrest, with Thin Sections by Mr. A. Herriot.

(b) Gems and Gem Materials, by Messrs. E. W. R. Stollery, F.G.A. and A. M. Ramsay.

(c) Growth of Coral in Curacao Harbour, by Professor J. Walton.

(d) Model of a Trilobite, by Mr. W. Hood.

(e) A New Trilobite from Aldons, Ayrshire, by Mr. R. P. Tripp.

(f) The Schiehallion Boulder Bed, by Dr. H. Pantin.

Light Refreshments

The innovation of a Gem and Gem Materials show at the Geological Society's members night was a great success and it looks as if we will make quite a few converts to the lapidary side of the Earth Sciences.

As far as we can tell, this has been the biggest private gem display in Scotland, and owing to our "scrounging" was very comprehensive, including a cut Benitoite from a crystal I got in Santa Ana, Calif., from a very good friend, Howard Wilson.

The two main exhibits were, firstly, Robert Webster's unique collection of the rarer gem stones, and secondly, a suite of white synthetic Spinel in 28 different cuts by an amateur cutter. In this country this is an awe inspiring incident—gem cutting being a prerogative of the

professional, and my efforts to enlighten them on the extent and scope of gem cutting in the U.S.A. are met with polite but unbelieving looks.

The cabochon and polished slab collection comprised a weird and wonderful surprise to the geologists, who previously, had had no idea that rocks, and such rocks, would provide gem material. For months past I have been cadging cabs and slabs from all my friends in the United States, and from the following I got a really wonderful assortment of finished gems:

Eddie Brant, Anaheim, Calif.; Adelaide Gelhaus, Dillon, Mont.; Cal Gettings, Toledo, Ohio (Cal also sent me on loan 25 of his best cabs and faceted gems); Bernard Keys, Worland, Wyo.; Willard Olsen, New Port Richey, Fla.; Norman Pendleton, Santa Cruz, Calif.; R. A. Richards, Morristown, Ariz.; and Walt Wright, Santa Fe, New Mex.—also Brownie McCaslin, Georgetown, Calif. and Ken Steele, Angola, Ind. sent me lots of rough to work out.

We gave away a few cabs to the ladies in the course of the evening, which has left us with very few duplicates but we prefer to see them shared around.

Ernest Stollery, F.G.A., deserves all the credit and praise that is going, because he had nearly all the work to do as I was suffering sadly from my usual complaint "Ergophobia" (that one beats Leo Yedlin's "Inertia"). Ernie fixed up all the cases (16 of them) and planned the complete lay-out, though greatly to my regret he did not include in the show the first cab I ever cut, a plume agate from California.

A. M. (Sandy) Ramsay
1015 Aikenhead Rd.,
Kings Park
Glasgow S4, Scotland

R. & M. Rates Top of List!

Editor R & M:

Thanks very much for the membership card enrolling me as a member of the Rocks and Minerals Association. My very first enrollment in an association of this sort, and I do appreciate it. I've already had occasion to compare a sample copy of your magazine with magazines published by other Rock & Mineral houses and there's no question but that your publication rates the top of the list—even an "amachoor" can see that, and I'm very much an amateur.

Walter McNamara
7 Harmony St.
Danbury, Conn.

Apr. 1, 1953

A. N. GODDARD — A TRIBUTE

John F. Mihelcic

"Write me as one who loved his fellow men" could well have been said of A. N. Goddard.

He lived a full life in the truest sense of the word. Success was his because he knew how to work with people, he envisioned a goal of mutual attainment, and appreciated the universal values of culture in every day life.

We, in the Michigan Mineralogical Society, knew him as a friend to every member, as a founder with Fenton Combs, of our Society, and for his attainments in the industrial world in which he led his company to the third position in its field in the United States. And, to his credit, we knew him best for his friendship.

A. N. Goddard worked his way to an engineering degree at the Worcester Polytechnic Institute. Then followed a series of employment with various prominent industrial concerns, culminating in the founding of his own company to manufacture mill cutters and other precision tools. Employment conditions in the plant are so understanding that it has not had a strike during its existence. The company is now under the management of his two sons.

The Goddard collection of minerals ranks with the finest. The beautiful opal display at the Cranbrook Institute of Science was his personal concern. He contributed generously to the Institute and encouraged the Society to donate important specimens. His services as a trustee of the Institute were valuable. For these, and other civic efforts, an honorary doctorate degree was conferred upon him by Wayne University. As a director in the Engineering Society, he contributed to its excellence and national prominence.

The Society has lost a loyal member, Detroit has lost a prominent citizen, and his family, an inspiration.

Few men have applied their talents more judiciously. Our life is richer because we knew A. N. Goddard.

Editor's Note:—

Dr. Goddard, one of America's well known collectors, died Feb. 24, 1953, after an illness of sometime. The above tribute appeared in the March, 1953, issue of *The Conglomerate*, the official journal of the Michigan Mineralogical Society.

Dr. Goddard was a member of the Rocks and Minerals Association since Nov. 11, 1931, and a very good friend of Rocks and Minerals and its Editor.

IMPORTANCE OF MINERALS IN INDUSTRY

By BARBARA J. ANDERSON

48 Washington Avenue, Rutherford, N. J.

The use of minerals in industry has increased considerably in the past ten years. This has occurred because of the much publicized Atomic Bomb. Although this is not in industrial use, it is a factor in the expansion of minerals to be used in securing forces of power. During these years minerals have taken first place in relation to their uses in industry. Using minerals in industry has become a top ranking science along with engineering and chemistry. This is so because of the fact that mineralogy and geology both use all of the rules of chemistry. Mineralogy has become a part of our everyday life. It has not been recognized as such by the average person because he does not realize all of the things that go into the making of all the materials he uses. In the past the person using minerals was mainly connected with construction. The use of minerals today carries us into the chemical, electrical, engineering, and metallurgical fields, all of which have been enriched by their use. Many of the fluorescent minerals are used in electric lighting. Quartz and similar minerals are used in electronic controls, radio, television, and telephone transmitters. Research in this field has resulted in the manufacture of synthetic minerals.

In the metallurgical field the metals found by the average mineralogist are today more complex than ever before. We are searching out new metals for lightness and strength and new construction materials previously never dreamed of. We also find that glass is now made with different properties because of the introduction of new minerals.

The chemical field has been completely changed because of the introduction of new minerals and their uses in industry. The field of chemical research has broadened to such an extent that there is no end in sight.

The use of new minerals in industry has made necessary further research in industrial hygiene. One example of re-

search in industry would be the work done to prevent silicosis in coal miners. The person working with the minerals should know how to protect his health and much research is being carried on to aid him in doing so.

The sciences of mineralogy and geology are expanding daily due to the daily increase in the uses of minerals. Research work today must be stepped up and constantly carried on. New deposits of known minerals, new minerals, and little known minerals are needed to replace the mineral deposits being used up. A good example of this is the New Jersey Zinc Company mine at Franklin, N. J. This mine has been a source of zinc for over 100 years and is finally petering out. This mine is known to have produced the largest percentage of zinc ore in the world. These factors tend to make us realize that the increasing use of minerals in industry makes mineralogy one of the most important sciences, and a very important profession.

Fifty years ago minerals in industrial use would have included cement, clay, coal, iron, and probably a few others. As time went on more minerals were added and more research was needed. We have watched the expansion of the uses of minerals in paints, and the substitution of minerals due to shortages in war time. In 1937 the first edition of *INDUSTRIAL MINERALS AND ROCKS* was published, edited by the Committee on Industrial Minerals and Rocks and published by the Institute of Mining and Metallurgical Engineers. There are two volumes, metallic and non-metallic. The non-metallic volume contained minerals by the thousand, they were divided into several groups, such as abrasives, insulating materials, clays, borax and borates, gypsums, salines, and the pigments in paints. The mineralogical book of today would require several volumes instead of just two.

From this study we find that as our

(Continued on page 293)

Publications Recently Received

Mineralogy of Greenland, by O. B. Boggild.

Here is a publication that will be most favorably received by American mineral collectors and especially those who are in any way interested in Greenland's minerals. It's a new publication, printed this year, and is not a small copy of a few thin pages but a 7x11 inch volume of 442 pages and all in *English*. It is divided as follows: Preface, pages 5-11; Minerals, pages 12-427 (grouped according to elements, sulphides, carbonates, oxides, etc.); Alphabetical List of Localities, pages 428-435; Alphabetical List of the Minerals, pages 436-437; Addenda and Corrigenda, pages 438-442.

This most interesting and valuable volume is illustrated with 88 figures and one map (shows principal settlements, localities, mines, etc.) A copy should be in the hands of every mineral collector.

Published by C. A. Reitzels Forlag, Bianco Lunos Bogtrykkeri, Kobenhavn, Denmark. Price 65 kroner (about \$9.50).

How To Cut Gems; by Dan O'Brien.

A new book "How to Cut Gems" by Dan O'Brien was recently published by Dan and Marie O'Brien. The book, consisting of 50 pages, written in simple language and well illustrated with fine clear photos, makes extremely good reading and instructive for the beginner as well as one advanced in gem cutting.

Mr. O'Brien is an instructor in lapidary with a number of years experience in teaching beginners. Therefore, he knows the problems of beginners, anticipates their many questions, and so his book is destined not only to meet these problems but to encourage rank amateurs to continue in this fascinating work so that they too can produce beautiful gems.

The book sells for only \$1.00 and it contains so much valuable information that everyone interested in cutting should have a copy.

For sale by Dan and Marie O'Brien, 1116 N. Wilcox Ave., Hollywood 38, Calif.

Rockhounds In The Making; by Marguerite Beymer.

Here is a delightful little book that is made up of letters from some of America's most noted rockhounds telling how each one became interested in minerals. Many of the writers got interested while very young—they picked up pretty or odd rocks and in their desire to learn what they had found eventually became mineral collectors. In reading this interesting book, many a reader will find his experience parallels that of one or more writers.

This is a 112 page publication including 8 fine photos and sells at \$2.50 per copy. Order direct from the author, Marguerite Beymer, 527 E. 8th St., The Dalles, Oregon. (Many dealers carry the book, also).

Riches from the Earth; by Carroll Lane Fenton and Mildred Adams Fenton.

The Fentons have written another book on minerals. This couple, who are America's most distinguished authors of books on mineralogy and geology for the laymen, have just had their latest book released, on March 19, 1953.

"Riches from the Earth" is a story of our mineral resources. Some of our minerals have been used for ages, and almost everyone knows them, others were not used until recent times, and are not so familiar. Still others are so new that even scientists do not know much about them, and industries cannot yet obtain them cheaply or in large quantities. Still, these new materials are being used, and they will grow more important in the years to come.

Here is a book about these rare and everyday riches that come from rocks in the earth. It tells what they look like and where they are found. It traces their origin during ancient times, tells how they were taken from the ground, and describes their most important uses. It explains why some are common and cheap though others are scarce, and shows what is being done to locate new supplies or to find substitutes for those that no longer meet the demands of our growing industries.

The book contains 159 pp. with many nice illustrations (printed in easy reading type). Price \$2.75.

Published by The John Day Company, Inc., 210 Madison Ave., New York, N. Y.

Geology of the Caballo Mountains; by Vincent C. Kelley and Caswell Silver.

The Caballo Mountains in central southern New Mexico contain rocks representative of the entire Paleozoic as well as the Cretaceous, Tertiary, and Recent. The mountains are a northward-trending range, about 30 miles in length, comprise an area of about 165 sq. miles, with Timber Mt., 7,330 ft. as its highest peak. Caballo Peak, a prominent landmark toward the north end of the mountains, is 6,060 feet.

This interesting report contains 286 pages, 19 plates, 26 figures. Published by the University of New Mexico Press, Albuquerque, N. Mexico—\$2.50 (cloth bound—\$5.00).

Western Australia Bulletin

Collie Mineral Field, by J. H. Lord, B.Sc., F. G. S.

This is the first Bulletin compiled by the Geological Survey on the Geology and mineral resources of the Collie Mineral Field, which contains the only coal seams being worked in Western Australia. It deals essentially with coal, as this is the only mineral produced in commercial quantities. The report issued as Bull 105 Part 1, contains 247 pp. 56 figs., 11 plates. Issued by the Western Australia Geological Survey, Perth, Western Australia.

Madagascar Bulletin Annales Geologiques du service des Mines. Fascicule No. XIX. 184 pp., 18 plates, 1 large map in color.

In French. Published by Service Geologique, B.P. 280, Tananarive, Madagascar.

Fluorescence—What It Is; a lecture by William Clement Casperson, Curator of the Paterson Museum.

For those interested in fluorescence and want to know more about it. Mr. Casperson's new book should be the answer—it gives a clear explanation with chart. This 20 page booklet costs \$1.00 per copy and can be obtained from the author, William C. Casperson, 9-11 Hamilton St., Paterson 1, N. J.

Catalogs

Schrader's New Catalog

In the last issue it was announced that Schrader Instrument Company, Independence, Iowa, had released their catalog No. 53. Due to an oversight, the price was not given. A copy of this 64-page illustrated catalog can be had for 50c.

The Sterling Shop Price List

The Sterling Shop, (B. E. Sledge, Prop.), 8679 Castro Valley Blvd., Castro Valley, Calif., has issued a 7-page price list covering books, cutting material, cut stones, lapidary supplies, et cetera.

Mid-West Shop Price List

A 4-page price list featuring minerals and fossils has recently been issued by the Mid-West Shop, 9709 S. Prospect, Chicago 43, Illinois.

Eberbach's Bulletin

Eberbach & Son Co., 200 E. Liberty St., Ann Arbor, Mich., publish a little bulletin called the "Announcer" which is free on request. The Eberbach Company are dealers in scientific equipment and the last issue of the Announcer No. 53-3-50, had a short article on a portable specimen polisher.

LOOKING BACK - - -

Twenty-Five Years Ago in ROCKS AND MINERALS

June 1928 Issue

Some mineral localities in Orange County, N. Y., by Charles W. Hoadley, pp. 33-34. Orange County is noted for its many minerals and famous localities.

Some minerals of Borneo, by Edward Cahen, pp. 34-35. Antimony, diamonds, gold, mercury are only some of the minerals to be found on the large island.

The story of gold, by Frederick A. Burt, pp. 36-37. An interesting story on the precious metal, its mining, processing, and uses.

The charms of mineralogy, by Miss Betty Browne, pp. 38-39. The author, a young girl, tells of the fascinations, thrills, and knowledge to be acquired in the most worthwhile hobby in the world.

Paleontology Department conducted by Benjamin T. Diamond, pp. 40-41. In this issue, corals were described.

The origin of the native metals, by P. Walther, pp. 42-43. This interesting article tells how native metals are formed in the rocks.

Disposition of mineral collections, by Albert C. Bates, p. 43. The writer mentions two famous collections, Roebling and the Canfield. Both collections were formed in New Jersey and both were given to the Smithsonian Institution at Washington, D.C. Mr. Bates believed that the Canfield collection should have remained in New Jersey and gave reasons for it.

FROM AROUND THE WORLD - - -

SPECIMENS

Gilsonite, Utah. A black massive hydrocarbon. A nice addition to any collection. 2 x 3" 85c.

Pumice, Utah. The lightest stone. Some floats on water. Chunks 2 x 3" 35c; 3 x 4" 60c; larger \$1.00.

Kaolin, England. After orthoclase excellent crystals. White 1 x 2" \$1.00, \$1.75, \$2.50 each.

Amazonite, Colo. Some pretty nice green singles and clusters. Some with smoky quartz. 35c, 75c, \$1.25, \$1.75, \$2.75, \$3.50, \$5.00.

Vanadinite, Mexico. An especially nice 5 x 7" specimen. Brown crystals with white calcite coating rock. Two only at \$10.00 each.

Satinspar, N. Y. Choice pearly white chunks. 2 x 2" 50c; 2 x 3" 75c; larger at \$1.50 and \$2.00 each.

GEM MATERIAL

Aventurine, India. Mica spangles in green quartz. 3 sq. in. slab for \$1.35 or 1/2 lb. chunk for \$2.25.

Topaz, Mexico. Facet quality crystals averaging 1 1/2 gram each. Colorless to pale peach. 5 gms. \$1.50; 15 gms. \$3.75.

Tiger Eye, Africa. RED, BLUE, GOLDEN. One slab each total 9 sq. in. or more for only \$3.50. Makes 15 nice stones.

Vesuvianite, Calif. Green "Calif. Jade" 1 sq. in. slab for \$1.00 or in chunks at \$1.75 per pound.

Turquoise, Nevada. Good blue pebbles 1/2" and larger. Mine run at 7 oz. for \$5.00.

Petrified Wood, Arizona. Some pretty good cutting material in chunks. We offer this at 5 pounds for \$3.50.

Moonstone, Oregon. Orthoclase feldspar in faceting quality. Chunks average 3 grams each. Per ounce \$1.00, 5 oz. for \$4.25.

APACHE TEAR SPECIAL !!!

We just received a large shipment of these popular obsidian nodules. They run from 1/2" to 2" in size and are clear smoky color. Use them for cabs, facet, or just pocket pieces. 1 pound 65c, 5 pounds \$2.50, 10 pounds \$4.50. Send EXTRA for POSTAGE on this special.

ABOUT POSTAGE !!!

Except for the above apache tear special we'll pay postage if your order is \$5.00 or over. Less than \$5.00 please include extra for postage. We supply our 1953 list of 30 pages and our special monthly list free of charge. Ask for them. We're on our 7th year of full time business catering to the mail-order trade and we've not been idle. Try our prompt, personal service. Your friends trade with us.

SYNTHETIC RUBY AND ALEXANDRITE SPECIAL !!!

Beautiful cut stones of 10 x 12 mm. size. About 7 carats. Step or octagon cut. Blood red ruby or changeable red/green alexandrite. We import these regularly from Germany. \$3.45 includes all tax.

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SUPPLIES OF ALL KINDS !!!

Ultra-Violet mineralights, books, Geiger Counters. Blow-pipes 75c; hardness scale sets \$2.25, 10X magnifiers \$1.65; fluorescent mineral sets; box of 10 pieces \$2.50; gem cutters templates; dop cement; jewelry mounts and a large variety of other things for the collector and cutter. Write for our lists now while you think of it. See us at the big convention in San Diego, July 17, 18, 19 this year.

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